Argument

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(Redirected from Argument by analogy)

This article is about the subject as it is studied in logic and philosophy. For other uses, see Argument (disambiguation).

In logic and philosophy, an **argument** is an attempt to persuade someone of something, by giving reasons or evidence for accepting a particular conclusion.[1][2] The general structure of an argument in a natural language is that of premises (typically in the form of propositions, statements or sentences) in support of a claim: the conclusion.[3][4][5] Many arguments can also be formulated in a formal language. An argument in a formal language shows the logical form of the natural language arguments obtained by its interpretations.*

In a typical deductive argument, the premises are meant to provide a guarantee of the *truth* of the conclusion, while in an inductive argument, they are thought to provide reasons supporting the conclusion's *probable* truth.[6] The standards for evaluating other kinds of arguments may rest on different or additional criteria than truth, however, such as the persuasiveness of so-called "indispensability claims" in transcendental arguments[7] or even the disclosure of new possibilities for thinking and acting.[8]

The criteria used in evaluating arguments and their forms of reasoning are studied in logic.[9] Ways of formulating arguments effectively are studied in rhetoric (see also: Argumentation theory).

Contents

[hide]

1 Formal and informal arguments

2 Standard argument types

3 Deductive arguments

- 3.1 Validity
- 3.2 Soundness

4 Inductive arguments

5 Defeasible arguments

6 Argument by analogy

7 Transitional arguments

8 Other kinds of arguments

- 8.1 Argument in informal logic
    - 8.1.1 Logical status of argument
- 8.2 World-disclosing arguments

9 Explanations and arguments

10 Fallacies and nonarguments

11 See also

12 Notes

13 References

14 Further reading

15 External links

[edit]Formal and informal arguments

Further information: Informal logic and Formal logic

Informal arguments as studied in *informal logic*, are presented in ordinary language and are intended for everyday discourse. Conversely, formal arguments are studied in *formal logic* (historically called *symbolic logic*, more commonly referred to as *mathematical logic* today) and are expressed in a formal language. Informal logic may be said to emphasize the study of argumentation, whereas formal logic emphasizes implication and inference. Informal arguments are sometimes implicit. That is, the logical structure –the relationship of claims, premises, warrants, relations of implication, and conclusion –is not always spelled out and immediately visible and must sometimes be made explicit by analysis.

[edit]Standard argument types

There are several kinds of arguments in logic, the best-known of which are "deductive" and "inductive." These are sometimes referred to broadly as "truth-preserving" arguments, because they assert something about the truth of a particular claim. A deductive argument asserts that the truth of the conclusion is a logical consequence of the premises. An inductive argument, on the other hand, asserts that the truth of the conclusion is supported by the premises. Each premise and the conclusion are truth bearers or "truth-candidates", capable of being either true or false (and not both). While statements in an argument are referred to as being either *true* or *false*, arguments are referred to as being *valid* or *invalid* (see logical truth). A deductive argument is valid if and only if the truth of the conclusion is entailed by (is a logical consequence of) the premises, and its corresponding conditional is therefore a logical truth. A sound argument is a valid argument with true premises; a valid argument may well have false premises.

[edit]Deductive arguments

Main article: Deductive argument

A *deductive argument* is one that, if valid, has a conclusion that is entailed by its premises. In other words, the truth of the conclusion is a logical consequence of the premises—if the premises are true, then the conclusion must be true. It would be self-contradictory to assert the premises and deny the conclusion, because the negation of the conclusion is contradictory to the truth of the premises.

[edit]Validity

Main article: Validity

Deductive arguments may be either valid or invalid. If an argument is valid, and its premises are true, the conclusion must be true: a valid argument cannot have true premises and a false conclusion.

The validity of an argument depends, however, not on the actual truth or falsity of its premises and conclusions, but solely on whether or not the argument has a valid logical form. The validity of an argument is not a guarantee of the truth of its conclusion. A valid argument may have false premises and a false conclusion.

Logic seeks to discover the valid forms, the forms that make arguments valid arguments. An argument form is valid if and only if all arguments of that form are valid. Since the validity of an argument depends on its form, an argument can be shown to be invalid by showing that its form is invalid, and this can be done by giving another argument of the same form that has true premises but a false conclusion. In informal logic this is called a counter argument.

The form of argument can be shown by the use of symbols. For each argument form, there is a corresponding statement form, called a corresponding conditional, and an argument form is valid if and only its corresponding conditional is a logical truth. A statement form which is logically true is also said to be a valid statement form. A statement form is a logical truth if it is true under allinterpretations. A statement form can be shown to be a logical truth by either (a) showing that it is a tautology or (b) by means of a proof procedure.

The corresponding conditional of a valid argument is a necessary truth (true *in all possible worlds*) and so the conclusion necessarily follows from the premises, or follows of logical necessity. The conclusion of a valid argument is not necessarily true, it depends on whether the premises are true. The conclusion of a valid argument need not be a necessary truth: if it were so, it would be so independently of the premises.

For example:

> *Some Greeks are logicians; therefore, some logicians are Greeks.* Valid argument; it would be self-contradictory to admit that *some Greeks are logicians* but deny that *some (any) logicians are Greeks*.
> *All Greeks are human and all humans are mortal; therefore, all Greeks are mortal.* : Valid argument; if the premises are true the conclusion must be true.
> *Some Greeks are logicians and some logicians are tiresome; therefore, some Greeks are tiresome.* Invalid argument: the tiresome logicians might all be Romans (for example).

Either we are all doomed or we are all saved; we are not all saved; therefore, we are all doomed. Valid argument; the premises entail the conclusion. (Remember that this does not mean the conclusion has to be true; it is only true if the premises are true, which they may not be!)

Premise 1: Some men are hawkers. Premise 2: Some hawkers are rich. Conclusion: Some men are rich.

This argument is invalid. There is a way where you can determine whether an argument is valid, give a counter-example with the same argument form.

Counter-Example: Premise 1: Some people are herbivores. Premise 2: Some herbivores are zebras. Conclusion: Some people are zebras. (This is obviously false.)

Note that the counter-example follows the P1. Some x are y. P2. Some y are z. C. Some x are z. format. We can now conclude that the hawker argument is invalid.

Arguments can be invalid for a variety of reasons. There are well-established patterns of reasoning that render arguments that follow them invalid; these patterns are known as formal fallacies.

[edit]**Soundness**

Main article: Soundness

A sound argument is a valid argument whose conclusion follows from its premise(s), and the premise(s) of the argument are true.

[edit]Inductive arguments

Main article: Inductive argument

Non-deductive logic is reasoning using arguments in which the premises support the conclusion but do not entail it. Forms of non-deductive logic include the statistical syllogism, which argues from generalizations true for the most part, and induction, a form of reasoning that makes generalizations based on individual instances. An inductive argument is said to be *cogent* if and only if the truth of the argument's premises would render the truth of the conclusion probable (i.e., the argument is *strong*), and the argument's premises are, in fact, true. Cogency can be consideredinductive logic's analogue to deductive logic's "soundness." Despite its name, mathematical induction is not a form of inductive reasoning. The problem of induction is the philosophical question of whether inductive reasoning is valid.

[edit]Defeasible arguments

An argument is defeasible when additional information (such as new counterreasons) can have the effect that it no longer justifies its conclusion. The term "defeasibility" goes back to the legal theorist H.L.A. Hart, although he focused on concepts instead of arguments. Stephen Toulmin's influential argument model includes the possibility of counterreasons that are characteristic of defeasible arguments, but he did not discuss the evaluation of defeasible arguments. Defeasible arguments give rise to defeasible reasoning.

[edit]Argument by analogy

Argument by analogy may be thought of as argument from the particular to particular. An argument by analogy may use a particular truth in a premise to argue towards a similar particular truth in the conclusion. For example, if A. Plato was mortal, and B. Socrates was like Plato in other respects, then asserting that C. Socrates was mortal is an example of argument by analogy because the reasoning employed in it proceeds from a particular truth in a premise (Plato was mortal) to a similar particular truth in the conclusion, namely that Socrates was mortal.[10]

[edit]Transitional arguments

In epistemology, transitional arguments attempt to show that a particular explanation is better than another because it is able to make sense of a transition from old to new. That is, if explanation*b* can account for the problems that existed with explanation *a*, but not vice versa, then *b* is regarded to be the more reasonable explanation. A common example in the history of science is the transition from pre-Galilean to Galilean understandings of physical motion.[11]

[edit]Other kinds of arguments

Other kinds of arguments may have different or additional standards of validity or justification. For example, Charles Taylor writes that so-called transcendental arguments are made up of a "chain of indispensability claims" that attempt to show why something is necessarily true based on its connection to our experience,[12] while Nikolas Kompridis has suggested that there are two types of "fallible" arguments: one based on truth claims, and the other based on the time-responsive disclosure of possibility (see world disclosure).[13] The late French philosopher Michel Foucault is said to have been a prominent advocate of this latter form of philosophical argument.[14]

[edit]Argument in informal logic

Argument is an informal calculus, relating an effort to be performed or sum to be spent,
to possible future gain, either economic or moral.
In informal logic, an argument is a connexion between
a) an *individual* action
b) through which a *generally accepted* good is obtained.
Ex :

1. a) You should marry Jane (individual action, individual decision)

b) because she has the same temper as you. (generally accepted wisdom that marriage is good in itself, and it is generally accepted that people with the same character get along well).

1. a) You should not smoke (individual action, individual decision)

b) because smoking is harmful (generally accepted wisdom that health is good).

The argument is neither a) *advice* nor b) *moral or economical judgement*, but the connection between the two. An argument always uses the connective **because**. An argument is not an**explanation**. It does not connect two events, cause and effect, which already took place, but a possible individual action and its beneficial outcome. An argument is not a **proof**. A proof is a logical and cognitive concept; an argument is a praxeologic concept. A proof changes our knowledge; an argument compels us to act.

[edit]Logical status of argument

Argument does not belong to logic, because it is connected to a real person, a real event, and a real effort to be made.
a) If you, John, will buy this stock, it will become twice as valuable in a year. b) If you, Mary, study dance, you will become a famous ballet dancer.

The value of the argument is connected to the immediate circumstances of the person spoken to. If, in the first case,(a) John has no money, or will die the next year, he will not be interested in buying the stock. If, in the second case (b)she is too heavy, or too old, she will not be interested in studying and becoming a dancer. The argument is not logical, but profitable.

[edit]World-disclosing arguments

Main article: world disclosure

World-disclosing arguments are a group of philosophical arguments that are said to employ a disclosive approach, to reveal features of a wider ontological or cultural-linguistic understanding – a "world," in a specifically ontological sense – in order to clarify or transform the background of meaning and "logical space" on which an argument implicitly depends.[15]

[edit]Explanations and arguments

Main article: Explanation

While arguments attempt to show that something is, will be, or should be the case, explanations try to show *why* or *how* something is or will be. If Fred and Joe address the issue of *whether* or not Fred's cat has fleas, Joe may state: "Fred, your cat has fleas. Observe the cat is scratching right now." Joe has made an *argument that* the cat has fleas. However, if Fred and Joe agree on the fact that the cat has fleas, they may further question *why* this is so and put forth an *explanation*: "The reason the cat has fleas is that the weather has been damp." The difference is that the attempt is not to settle whether or not some claim is true, it is to show *why* it is true.

Arguments and explanations largely resemble each other in rhetorical use. This is the cause of much difficulty in thinking critically about claims. There are several reasons for this difficulty.

- People often are not themselves clear on whether they are arguing for or explaining something.
- The same types of words and phrases are used in presenting explanations and arguments.
- The terms 'explain' or 'explanation,' et cetera are frequently used in arguments.
- Explanations are often used within arguments and presented so as to serve *as arguments*.[16]

Explanations and arguments are often studied in the field of Information Systems to help explain user acceptance of knowledge-based systems. Certain argument types may fit better with personality traits to enhance acceptance by individuals.[17]

[edit]Fallacies and nonarguments

Main article: Logical fallacy

Fallacies are types of argument or expressions which are held to be of an invalid form or contain errors in reasoning. There is not as yet any general theory of fallacy or strong agreement among researchers of their definition or potential for application but the term is broadly applicable as a label to certain examples of error, and also variously applied to ambiguous candidates.[18]

In Logic types of fallacy are firmly described thus: First the premises and the conclusion must be statements, capable of being true and false. Secondly it must be asserted that the conclusion follows from the premises. In English the words *therefore*, *so*, *because* and *hence* typically separate the premises from the conclusion of an argument, but this is not necessarily so. Thus:*Socrates is a man, all men are mortal therefore Socrates is mortal* is clearly an argument (a valid one at that), because it is clear it is asserted that *Socrates is mortal* follows from the preceding statements. However *I was thirsty and therefore I drank* is NOT an argument, despite its appearance. It is not being claimed that *I drank* is logically entailed by *I was thirsty*. The *therefore* in this sentence indicates *for that reason* not *it follows that*.

Elliptical arguments

Often an argument is invalid because there is a missing premise--the supply of which would render it valid. Speakers and writers will often leave out a strictly necessary premise in their reasonings if it is widely accepted and the writer does not wish to state the blindingly obvious. Example: *All metals expand when heated, therefore iron will expand when heated.* (Missing premise: iron is a metal). On the other hand, a seemingly valid argument may be found to lack a premise – a 'hidden assumption' – which if highlighted can show a fault in reasoning. Example: A witness reasoned:*Nobody came out the front door except the milkman; therefore the murderer must have left by the back door.* (Hidden assumption- the milkman was not the murderer).

[edit]See also

Logic portal

Thinking portal

- Abductive reasoning
- Analogy
- Argument map
- Argumentation theory
- Argumentative dialogue
- Belief bias
- Boolean logic
- Deductive reasoning
- Defeasible reasoning
- Fallacy
- Dialectic
- Formal fallacy
- Inductive reasoning
- Informal fallacy
- Inquiry
- Practical arguments
- Soundness theorem
- Soundness
- Truth
- Validity

[edit]Notes

1. ^ "Argument", Internet Encyclopedia of Philosophy." "In everyday life, we often use the word "argument" to mean a verbal dispute or disagreement. This is not the way this word is usually used in philosophy. However, the two uses are related. Normally, when two people verbally disagree with each other, each person attempts to convince the other that his or her viewpoint is the right one. Unless he or she merely results to name calling or threats, he or she typically presents an argument for his or her position, in the sense described above. In philosophy, "arguments" are those statements a person makes in the attempt to convince someone of something, or present reasons for accepting a given conclusion."
2. ^ Ralph H. Johnson, *Manifest Rationality: A pragmatic theory of argument* (New Jersey: Laurence Erlbaum, 2000), 46-49.
3. ^ Ralph H. Johnson, *Manifest Rationality: A pragmatic theory of argument* (New Jersey: Laurence Erlbaum, 2000), 46.
4. ^ The Cambridge Dictionary of Philosophy, 2nd Ed. CUM, 1995 "Argument: a sequence of statements such that some of them (the premises) purport to give reason to accept another of them, the conclusion"
5. ^ Stanford Enc. Phil., *Classical Logic*
6. ^ "Deductive and Inductive Arguments," Internet Encyclopedia of Philosophy.
7. ^ Charles Taylor, "The Validity of Transcendental Arguments", *Philosophical Arguments* (Harvard, 1995), 20-33. "[Transcendental] arguments consist of a string of what one could call indispensability claims. They move from their starting points to their conclusions by showing that the condition stated in the conclusion is indispensable to the feature identified at the start… Thus we could spell out Kant's transcendental deduction in the first edition in three stages: experience must have an object, that is, be *of* something; for this it must be coherent; and to be coherent it must be shaped by the understanding through the categories."

8. ^ Nikolas Kompridis, "World Disclosing Arguments?" in *Critique and Disclosure" (Cambridge: MIT Press, 2006), 116-124.*
9. ^ "Argument", Internet Encyclopedia of Philosophy."
10. ^ Shaw 1922: p. 74.
11. ^ Charles Taylor, "Explanation and Practical Reasoning", *Philosophical Arguments*, 34-60.
12. ^ Charles Taylor, "The Validity of Transcendental Arguments", *Philosophical Arguments* (Harvard, 1995), 20-33.
13. ^ Nikolas Kompridis, "Two Kinds of Fallibilism", *Critique and Disclosure* (Cambridge: MIT Press, 2006), 180-183.
14. ^ In addition, Foucault said of his own approach that "My role ... is to show people that they are much freer than they feel, that people accept as truth, as evidence, some themes which have been built up at a certain moment during history, and that this so-called evidence can be criticized and destroyed." He also wrote that he was engaged in "the process of putting historico-critical reflection to the*test of concrete practices*… I continue to think that this task requires work on our limits, that is, a patient labor giving form to our impatience for liberty." (emphasis added) Hubert Dreyfus, "Being and Power: Heidegger and Foucault" and Michel Foucault, "What is Enlightenment?"
15. ^ Nikolas Kompridis, "World Disclosing *Arguments*?" in *Critique and Disclosure*, Cambridge:MIT Press (2006), 118-121.
16. ^ *Critical Thinking*, Parker and Moore
17. ^ Justin Scott Giboney, Susan Brown, and Jay F. Nunamaker Jr. (2012). "User Acceptance of Knowledge-Based System Recommendations: Explanations, Arguments, and Fit" 45th Annual Hawaii International Conference on System Sciences, Hawaii, January 5–8.
18. ^ [1]

[edit]References

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[edit]External links

- Argument at PhilPapers
- Argument at the Indiana Philosophy Ontology Project
- Argument entry in the *Internet Encyclopedia of Philosophy*

List of fallacies

From Wikipedia, the free encyclopedia

For specific popular misconceptions, see List of common misconceptions.

A fallacy is incorrect argumentation in logic and rhetoric resulting in a lack of validity, or more generally, a lack of soundness. Fallacies are either formal fallacies or informal fallacies.

Contents

[hide]

1 Formal fallacies
  - 1.1 Propositional fallacies
  - 1.2 Quantification fallacies
  - 1.3 Formal syllogistic fallacies
2 Informal fallacies
  - 2.1 Faulty generalizations
  - 2.2 Red herring fallacies
3 Conditional or questionable fallacies
4 See also
5 References

6 Further reading

7 External links

[edit]Formal fallacies

A formal fallacy is an error in logic that can be seen in the argument's form without requiring an understanding of the argument's content.[1] All formal fallacies are specific types of non sequiturs.

- Appeal to probability – assumes that because something *could* happen, it is inevitable that it *will* happen.[2][3]
- Argument from fallacy – assumes that if an argument for some conclusion is fallacious, then the conclusion *itself* is false.[4]
- Base rate fallacy – making a probability judgement based on conditional probabilities, without taking into account the effect of prior probabilities.[5]
- Conjunction fallacy – assumption that an outcome simultaneously satisfying multiple conditions is more probable than an outcome satisfying a single one of them.[6]
- Masked man fallacy (illicit substitution of identicals) – the substitution of identical designators in a true statement can lead to a false one.[7]

[edit]Propositional fallacies

A propositional fallacy is an error in logic that concerns compound propositions. For a compound proposition to be true, the truth values of its constituent parts must satisfy the relevant logical connectives which occur in it (most commonly: <and>, <or>, <not>, <only if>, <if and only if>). The following fallacies involve inferences whose correctness is not guaranteed by the behavior of those logical connectives, and hence, which are not logically guaranteed to yield true conclusions.
Types of Propositional fallacies:

- Affirming a disjunct – concluded that one disjunct of a logical disjunction must be false because the other disjunct is true; *A or B; A; therefore not B.*[8]
- Affirming the consequent – the antecedent in an indicative conditional is claimed to be true because the consequent is true; *if A, then B; B, therefore A.*[8]
- Denying the antecedent – the consequent in an indicative conditional is claimed to be false because the antecedent is false; *if A, then B; not A, therefore not B.*[8]

[edit]Quantification fallacies

A quantification fallacy is an error in logic where the quantifiers of the premises are in contradiction to the quantifier of the conclusion.
Types of Quantification fallacies:

- Existential fallacy – an argument has a universal premise and a particular conclusion.[9]

[edit]**Formal syllogistic fallacies**

Syllogistic fallacies – logical fallacies that occur in syllogisms.

- Affirmative conclusion from a negative premise (illicit negative) – when a categorical syllogism has a positive conclusion, but at least one negative premise.[9]
- Fallacy of exclusive premises – a categorical syllogism that is invalid because both of its premises are negative.[9]
- Fallacy of four terms (*quaternio terminorum*) – a categorical syllogism that has four terms.[10]
- Illicit major – a categorical syllogism that is invalid because its major term is not distributed in the major premise but distributed in the conclusion.[9]
- Illicit minor – a categorical syllogism that is invalid because its minor term is not distributed in the minor premise but distributed in the conclusion.[9]
- Negative conclusion from affirmative premises (illicit affirmative) – when a categorical syllogism has a negative conclusion but affirmative premises. [9]
- Fallacy of the undistributed middle – the middle term in a categorical syllogism is not distributed.[11]

[edit]Informal fallacies

Informal fallacies – arguments that are fallacious for reasons other than structural (formal) flaws and which usually require examination of the argument's content.[12]

- Argument from ignorance (appeal to ignorance, *argumentum ad ignorantiam*) – assuming that a claim is true (or false) because it has not been proven false (true) or cannot be proven false (true).[13]
- Argument from repetition (*argumentum ad nauseam*) – signifies that it has been discussed extensively until nobody cares to discuss it anymore.
- Argument from silence (*argumentum e silentio*) – where the conclusion is based on the absence of evidence, rather than the existence of evidence.
- Argumentum verbosium – See Proof by verbosity, below.
- Begging the question (*petitio principii*) – where the conclusion of an argument is implicitly or explicitly assumed in one of the premises.[14]
- (shifting the) Burden of proof (see – *onus probandi*) – I need not prove my claim, you must prove it is false.
- Circular reasoning – when the reasoner begins with what he or she is trying to end up with.
- Circular cause and consequence – where the consequence of the phenomenon is claimed to be its root cause.

- Continuum fallacy (fallacy of the beard, line-drawing fallacy, sorites fallacy, fallacy of the heap, bald man fallacy) – improperly rejecting a claim for being imprecise.[15]
- Correlation proves causation (*cum hoc ergo propter hoc*) – a faulty assumption that correlation between two variables implies that one causes the other.[16]
- Correlative-based fallacies
  - Suppressed correlative – where a correlative is redefined so that one alternative is made impossible.[17]
- Equivocation – the misleading use of a term with more than one meaning (by glossing over which meaning is intended at a particular time).[18]
  - Ambiguous middle term – a common ambiguity in syllogisms in which the middle term is equivocated.[19]
- Ecological fallacy – inferences about the nature of specific individuals are based solely upon aggregate statistics collected for the group to which those individuals belong.[20]
- Etymological fallacy – which reasons that the original or historical meaning of a word or phrase is necessarily similar to its actual present-day meaning.[21]
- Fallacy of composition – assuming that something true of part of a whole must also be true of the whole.[22]
- Fallacy of division – assuming that something true of a thing must also be true of all or some of its parts.[23]
- False dilemma (false dichotomy, fallacy of bifurcation, black-or-white fallacy) – two alternative statements are held to be the only possible options, when in reality there are more.[24]
- If-by-whiskey – an argument that supports both sides of an issue by using terms that are selectively emotionally sensitive.
- Fallacy of many questions (complex question, fallacy of presupposition, loaded question, *plurium interrogationum*) – someone asks a question that presupposes something that has not been proven or accepted by all the people involved. This fallacy is often used rhetorically, so that the question limits direct replies to those that serve the questioner's agenda.
- Ludic fallacy – the belief that the outcomes of a non-regulated random occurrences can be encapsulated by a statistic; a failure to take into account unknown unknowns in determining the probability of an event's taking place.[25]
- Fallacy of the single cause (causal oversimplification[26]) – it is assumed that there is one, simple cause of an outcome when in reality it may have been caused by a number of only jointly sufficient causes.
- False attribution – an advocate appeals to an irrelevant, unqualified, unidentified, biased or fabricated source in support of an argument.

  - Fallacy of quoting out of context (contextomy) – refers to the selective excerpting of words from their original context in a way that distorts the source's intended meaning.[27]
- Argument to moderation (false compromise, middle ground, fallacy of the mean) – assuming that the compromise between two positions is always correct.[28]
- Gambler's fallacy – the incorrect belief that separate, independent events can affect the likelihood of another random event. If a coin flip lands on heads 10 times in a row, the belief that it is "due to land on tails" is incorrect.[29]
- Historian's fallacy – occurs when one assumes that decision makers of the past viewed events from the same perspective and having the same information as those subsequently analyzing the decision.[30] (Not to be confused with presentism, which is a mode of historical analysis in which present-day ideas, such as moral standards, are projected into the past.)
- Homunculus fallacy – where a "middle-man" is used for explanation, this sometimes leads to regressive middle-man. Explanations without actually explaining the real nature of a function or a process. Instead, it explains the concept in terms of the concept itself, without first defining or explaining the original concept.[*clarification needed*][31]
- Inflation Of Conflict - The experts of a field of knowledge disagree on a certain point, so the scholars must know nothing, and therefore the legitimacy of their entire field is put to question. [32]
- Incomplete comparison – where not enough information is provided to make a complete comparison.
- Inconsistent comparison – where different methods of comparison are used, leaving one with a false impression of the whole comparison.
- *Ignoratio elenchi* (irrelevant conclusion, missing the point) – an argument that may in itself be valid, but does not address the issue in question.[33]
- Kettle logic – using multiple inconsistent arguments to defend a position.
- Mind projection fallacy – when one considers the way he sees the world as the way the world really is.
- Moving the goalposts (raising the bar) – argument in which evidence presented in response to a specific claim is dismissed and some other (often greater) evidence is demanded.
- Nirvana fallacy (perfect solution fallacy) – when solutions to problems are rejected because they are not perfect.
- *Onus probandi* – from Latin "onus probandi incumbit ei qui dicit, non ei qui negat" the burden of proof is on the person who makes the claim, not on the person who denies (or questions the claim). It is a particular case of the "argumentum ad ignorantiam" fallacy, here the burden is shifted on the person defending against the assertion.

- *Petitio principii* – see begging the question.
- *Post hoc ergo propter hoc* Latin for "after this, therefore because of this" (false cause, coincidental correlation, correlation without causation) – X happened then Y happened; therefore X caused Y.[34]
- Proof by verbosity (*argumentum verbosium*, proof by intimidation) – submission of others to an argument too complex and verbose to reasonably deal with in all its intimate details. (See alsoGish Gallop and argument from authority.)
- Prosecutor's fallacy – a low probability of false matches does not mean a low probability of *some* false match being found.
- Psychologist's fallacy – an observer presupposes the objectivity of his own perspective when analyzing a behavioral event.
- Red herring – a speaker attempts to distract an audience by deviating from the topic at hand by introducing a separate argument which the speaker believes will be easier to speak to.[35]
- Regression fallacy – ascribes cause where none exists. The flaw is failing to account for natural fluctuations. It is frequently a special kind of the *post hoc* fallacy.
- Reification (hypostatization) – a fallacy of ambiguity, when an abstraction (abstract belief or hypothetical construct) is treated as if it were a concrete, real event or physical entity. In other words, it is the error of treating as a "real thing" something which is not a real thing, but merely an idea.
- Retrospective determinism – the argument that because some event has occurred, its occurrence must have been inevitable beforehand.
- Shotgun argumentation - the arguer offers such a large number of arguments for their position that the opponent can't possibly respond to all of them.[36] (See "Argument by verbosity" and "Gish Gallop", above.)
- Special pleading – where a proponent of a position attempts to cite something as an exemption to a generally accepted rule or principle without justifying the exemption.
- Wrong direction – cause and effect are reversed. The cause is said to be the effect and vice versa.[37]

[edit]Faulty generalizations

Faulty generalizations – reach a conclusion from weak premises. Unlike fallacies of relevance, in fallacies of defective induction, the premises are related to the conclusions yet only weakly buttress the conclusions. A faulty generalization is thus produced.

- Accident – an exception to a generalization is ignored.[38]
    - No true Scotsman – when a generalization is made true only when a counterexample is ruled out on shaky grounds.[39]

- Cherry picking (suppressed evidence, incomplete evidence) – act of pointing at individual cases or data that seem to confirm a particular position, while ignoring a significant portion of related cases or data that may contradict that position.[40]
- False analogy – an argument by analogy in which the analogy is poorly suited.[41]
- Hasty generalization (fallacy of insufficient statistics, fallacy of insufficient sample, fallacy of the lonely fact, leaping to a conclusion, hasty induction, *secundum quid*, converse accident) – basing a broad conclusion on a small sample.[42]
- Misleading vividness – involves describing an occurrence in vivid detail, even if it is an exceptional occurrence, to convince someone that it is a problem.
- Overwhelming exception – an accurate generalization that comes with qualifications which eliminate so many cases that what remains is much less impressive than the initial statement might have led one to assume.[43]
- Pathetic fallacy – when an inanimate object is declared to have characteristics of animate objects.[44]
- Thought-terminating cliché – a commonly used phrase, sometimes passing as folk wisdom, used to quell cognitive dissonance, conceal lack of thought-entertainment, move onto other topics etc. but in any case, end the debate with a cliche—not a point.

[edit]Red herring fallacies

A red herring fallacy is an error in logic where a proposition is, or is intended to be, misleading in order to make irrelevant or false inferences. In the general case any logical inference based on fake arguments, intended to replace the lack of real arguments or to replace implicitly the subject of the discussion.

Red herring – argument given in response to another argument, which is irrelevant and draws attention away from the subject of argument. *See also irrelevant conclusion.*

- *Ad hominem* – attacking the arguer instead of the argument.
  - Poisoning the well – a type of *ad hominem* where adverse information about a target is presented with the intention of discrediting everything that the target person says[45]
  - Abusive fallacy – a subtype of "ad hominem" when it turns into name-calling rather than arguing about the originally proposed argument.
- *Argumentum ad baculum* (appeal to the stick, appeal to force, appeal to threat) – an argument made through coercion or threats of force to support position[46]
- *Argumentum ad populum* (appeal to widespread belief, bandwagon argument, appeal to the majority, appeal to the people) – where a proposition is claimed to be true or good solely because many people believe it to be so[47]

- Appeal to equality – where an assertion is deemed true or false based on an assumed pretense of equality.
- Association fallacy (guilt by association) – arguing that because two things share a property they are the same
- Appeal to authority – where an assertion is deemed true because of the position or authority of the person asserting it.[48][49]
    - Appeal to accomplishment – where an assertion is deemed true or false based on the accomplishments of the proposer.
- Appeal to consequences (*argumentum ad consequentiam*) – the conclusion is supported by a premise that asserts positive or negative consequences from some course of action in an attempt to distract from the initial discussion[50]
- Appeal to emotion – where an argument is made due to the manipulation of emotions, rather than the use of valid reasoning[51]
    - Appeal to fear – a specific type of appeal to emotion where an argument is made by increasing fear and prejudice towards the opposing side
    - Appeal to flattery – a specific type of appeal to emotion where an argument is made due to the use of flattery to gather support.[52]
    - Appeal to pity (*argumentum ad misericordiam*) – an argument attempts to induce pity to sway opponents[53]
    - Appeal to ridicule – an argument is made by presenting the opponent's argument in a way that makes it appear ridiculous
    - Appeal to spite – a specific type of appeal to emotion where an argument is made through exploiting people's bitterness or spite towards an opposing party
    - Wishful thinking – a specific type of appeal to emotion where a decision is made according to what might be pleasing to imagine, rather than according to evidence or reason.[54]
- Appeal to motive – where a premise is dismissed by calling into question the motives of its proposer
- Appeal to novelty (*argumentum ad novitam*) – where a proposal is claimed to be superior or better solely because it is new or modern.[55]
- Appeal to poverty (*argumentum ad Lazarum*) – supporting a conclusion because the arguer is poor (or refuting because the arguer is wealthy). (Opposite of appeal to wealth.)[56]
- Appeal to tradition (*argumentum ad antiquitam*) – a conclusion supported solely because it has long been held to be true.[57]
- Appeal to nature - wherein judgement is based solely on whether the subject of judgement is 'natural' or 'unnatural'.[*citation needed*] For example (hypothetical): "Cannabis is healthy because it is natural"

- Appeal to wealth (*argumentum ad crumenam*) – supporting a conclusion because the arguer is wealthy (or refuting because the arguer is poor).[58] (Sometimes taken together with the appeal to poverty as a general appeal to the arguer's financial situation.)
- Argument from silence (*argumentum ex silentio*) – a conclusion based on silence or lack of contrary evidence
- Chronological snobbery – where a thesis is deemed incorrect because it was commonly held when something else, clearly false, was also commonly held[*citation needed*]
- Genetic fallacy – where a conclusion is suggested based solely on something or someone's origin rather than its current meaning or context.[59]
- Judgmental language – insulting or pejorative language to influence the recipient's judgment
- Naturalistic fallacy (is–ought fallacy[60], naturalistic fallacy[61]) – claims about what ought to be on the basis of statements about what is.
- Psychogenetic Fallacy - inferring why an argument is being used, associating it to some psychological reason, then assuming it is invalid as a result. It is wrong to assume that if the origin of an idea comes from a biased mind, then the idea itself must also be a false. [32]
- *Reductio ad Hitlerum* (playing the Nazi card) – comparing an opponent or their argument to Hitler or Nazism in an attempt to associate a position with one that is universally reviled (See also –Godwin's law)
- Straw man – an argument based on misrepresentation of an opponent's position[62]
- Texas sharpshooter fallacy – improperly asserting a cause to explain a cluster of data[63]
- *Tu quoque* ("you too", appeal to hypocrisy) – the argument states that a certain position is false or wrong and/or should be disregarded because its proponent fails to act consistently in accordance with that position[64]
- Two wrongs make a right – occurs when it is assumed that if one wrong is committed, another wrong will cancel it out.[65]

[edit]Conditional or questionable fallacies

- Black swan blindness – the argument that ignores low probability, high impact events, thus down playing the role of chance and under-representing known risks[66]
- Broken window fallacy – an argument which disregards lost opportunity costs (typically non-obvious, difficult to determine or otherwise hidden) associated with destroying property of others, or other ways of externalizing costs onto others. For example, an argument that states breaking a window generates income for a window fitter, but disregards the fact that the money spent on the new window cannot now be spent on new shoes.
- Definist fallacy – involves the confusion between two notions by defining one in terms of the other.[67]

- Naturalistic fallacy – attempts to prove a claim about ethics by appealing to a definition of the term "good" in terms of either one or more claims about natural properties (sometimes also taken to mean the appeal to nature)[citation needed] or God's will.
- Slippery slope (thin edge of the wedge, camel's nose) – asserting that a relatively small first step inevitably leads to a chain of related events culminating in some significant impact/event that should not happen, thus the first step should not happen. While this fallacy is a popular one, the it is, in its essence, an appeal to probability fallacy. (e.g if person x does y then z would (probably) occur, leading to q, leading to w, leading to e.) [68]

[edit]See also

Logic portal

- List of common misconceptions
- List of cognitive biases
- List of memory biases
- List of topics related to public relations and propaganda
- *Sophistical Refutations*, in which Aristotle presented thirteen fallacies
- *Straight and Crooked Thinking* (book)
- Mathematical fallacy
- List of paradoxes

Informal fallacy

From Wikipedia, the free encyclopedia

It has been suggested that *Fallacies of definition* be merged into this article or section. (Discuss) *Proposed since April 2012.*

An **informal fallacy** is an argument whose stated premises fail to support its proposed conclusion.[1] The problem with an informal fallacy often stems from a flaw in reasoning that render the conclusion unpersuasive. In contrast to a formal fallacy of deduction, the error is not merely a flaw in logic.

Contents

[hide]

1 Formal deductive fallacies and informal fallacies

2 See also

3 References

4 Further reading

5 External links

[edit]Formal deductive fallacies and informal fallacies

Formal fallacies of deductive reasoning fail to follow the rules of logic that guarantee a true conclusion follows given the truth of the premises. This is said to render the argument invalid.

Inductive fallacies are not formal in this sense. Their merit is judged in terms of rational persuasiveness, inductive strength or methodology (for example, statistical inference). For instance, the fallacy of hasty generalization, can be roughly stated as an invalid syllogism:

1. *A* is an *X*
2. *A* is also a *Y*
3. Therefore, all *X*s are also *Y*s

While never a valid deduction, if such an inference can made on statistical grounds, it may nonetheless be convincing.

[edit]See also

Main article: List of fallacies

Logic portal

Thinking portal

Psychology portal

- Argumentation theory
- Argument map
- Critical thinking
- Inference objection
- Inquiry
- Lemma
- Sophism

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[edit]Further reading

- Damer, T. E.; Rudinow, J.; Barry, V. E.; Munson, R.; Black, A.; Salmon, M. H.; Cederblom, J.; Paulsen, D.; Epstein, R. L.; Kernberger, C.; Others, (2009). *Attacking Faulty Reasoning: A Practical Guide to Fallacy-Free Arguments* (6E ed.). Wadsworth. ISBN 978-0-495-09506-4.

[edit]External links

- Logical fallacies A list of logical fallacies, explained.
- The Fallacy Files: Informal Fallacy

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Informal fallacies

- Absence paradox
- Begging the question
- Blind men and an elephant
- Cherry picking
- Complex question
- False analogy
- Fallacy of distribution (Composition
- Division)
- Furtive fallacy
- Hasty generalization
- I'm entitled to my opinion
- Loaded question
- McNamara fallacy

	● Name calling ● Nirvana fallacy ● Rationalization (making excuses) ● Red herring fallacy ● Special pleading ● Slothful induction
Correlative-based fallacies	False dilemma Denying the correlative Suppressed correlative
Deductive fallacies	Accident Converse accident
Inductive fallacies	Sampling bias Conjunction fallacy False analogy Hasty generalization Misleading vividness Overwhelming exception
Vagueness and ambiguity	Amphibology Continuum fallacy

	False precision Slippery slope
Equivocation	Equivocation False attribution Fallacy of quoting out of context Loki's Wager No true Scotsman Reification
Questionable cause	Animistic Appeal to consequences Argumentum ad baculum Correlation does not imply causation (Cum hoc) Gambler's fallacy and its inverse Post hoc Prescience Regression Single cause Slippery slope Texas sharpshooter The Great Magnet

Wrong direction

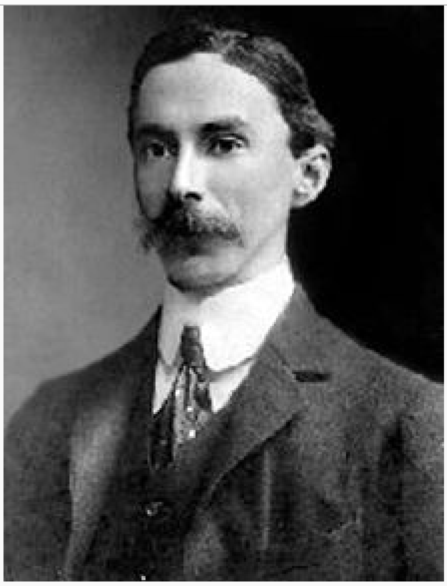
- List of fallacies

- Other types of fallacy

Argument from ignorance

From Wikipedia, the free encyclopedia

This article **needs additional citations for verification**. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. *(October 2010)*



Bertrand Russell, whose teapot analogyis often used to illustrate the argument from ignorance[citation needed]

Argument from ignorance, also known as *argumentum ad ignorantiam* or "appeal to ignorance" (where "ignorance" stands for: "lack of evidence to the contrary"), is a fallacy in informal logic. It asserts that a proposition is true because it has not yet been proven false, it is "generally accepted" (or vice versa). This represents a type of false dichotomy in that it excludes a third option, which is that there is insufficient investigation and therefore insufficient information to prove the proposition satisfactorily to be either true or false. Nor does it allow the admission that the choices may in fact not be two (true or false), but may be as many as four, (1) true, (2) false, (3) unknown between true or false, and (4) being unknowable (among the first three).[1] In debates, appeals to ignorance are sometimes used to shift the burden of proof.

The fallaciousness of arguments from ignorance does not mean that one can never possess good reasons for thinking that something does not exist, an idea captured by philosopher Bertrand

Russell's teapot, a hypothetical china teapot revolving about the sun between Earth and Mars; however this would fall more duly under the arena of pragmatism[vague], wherein a position must be demonstrated or proven in order to be upheld, and therefore the burden of proof is on the argument's proponent.[citation needed] *See also* Occam's razor (assume simplicity over complexity).

Contents

[hide]

1 Overview
- ○ 1.1 Basic argument
- ○ 1.2 Matters of confusion

2 Related terms
- ○ 2.1 Contraposition and Transposition
- ○ 2.2 Absence of evidence
- ○ 2.3 Evidence of absence
- ○ 2.4 Negative evidence
- ○ 2.5 Null result

3 Related arguments
- ○ 3.1 Argument from incredulity/Lack of imagination
- ○ 3.2 Argument from self-knowing (auto-epistemic)

4 Distinguishing *absence of evidence* from *evidence of absence*
- ○ 4.1 Formal argument

5 Examples
- ○ 5.1 Absence of evidence
- ○ 5.2 Negative results
- ○ 5.3 Evidence of absence
- ○ 5.4 Arguments from ignorance
- ○ 5.5 In the field of science
- ○ 5.6 Principles in law

6 Origin of the term

7 Sources

8 See also

9 References

10 External links

[edit]Overview

[edit]Basic argument

Arguments that appeal to ignorance rely *merely* on the fact that the veracity of the proposition is not disproven to arrive at a definite conclusion. These arguments fail to appreciate that the limits of one's understanding or certainty do not change what is true. They do not *inform* upon reality. That is, whatever the reality is, it does not “wait” upon human logic or analysis to be formulated. Reality exists at all times, and it exists ***independently*** of what is in the mind of anyone. And the true thrust of science and rational analysis is to separate preconceived notion(s) of what reality is, and to be open at all times to the observation of nature as it behaves, so as truly to *discover* reality. This fallacy can be very convincing and is considered by some[2] to be a special case of a*false dilemma* or *false dichotomy* in that they both fail to consider alternatives. A false dilemma may take the form:

- If a proposition has not been disproven, then it cannot be considered false and must therefore be considered true.
- If a proposition has not been proven, then it cannot be considered true and must therefore be considered false.

Such arguments attempt to exploit the facts that (a) true things can never be disproven and (b) false things can never be proven. In other words, appeals to ignorance claim that the converse of these facts are also true (therein lies the fallacy).

To reiterate, these arguments ignore the fact, and difficulty, that some true things may never be proven, and some false things may never be disproved with absolute certainty. The phrase "*absence of evidence is not evidence of absence*" can be used as a shorthand rebuttal to the second form of the ignorance fallacy (i.e. *P has never been absolutely proven and is therefore certainly false*). Most often it is directed at any conclusion derived from *null* results in an experiment or from the non-detection of something. In other words, where one researcher may say their experiment suggests evidence of absence, another researcher might argue that the experiment failed to detect a phenomenon for other reasons.

[edit]Matters of confusion

Carl Sagan beside aViking model

See also: Evidence of absence

Much confusion about arguments from ignorance can be caused when one side of a debate forgets that we often possess evidence of absence in practice.

The ignorance fallacy is sometimes confused (or combined) with logically valid contrapositive arguments. Contrapositive arguments rightly utilize the transposition rule of inference in classical logic to conclude something like: To the extent that *C implies E* then *Not-E must also imply Not-C*. In other words, if a cause *always* leads to an effect, then absence of the expected effect is evidence of absence of the cause. For example, if the causal proposition that *If it's raining outside then the streets will be wet* is assumed, then it can be assumed that *if the streets are not wet then it is not raining outside*. The inference that it cannot be raining outside because the streets are not getting wet is exactly as true, or perhaps exactly as untrue, as the original proposition. The statements are logically equivalent.

Carl Sagan explains in his book *The Demon-Haunted World*:

Appeal to ignorance: the claim that whatever has not been proved false must be true, and vice versa. (e.g., *There is no compelling evidence that UFOs are not visiting the Earth; therefore, UFOs exist, and there is intelligent life elsewhere in the Universe.* Or: *There may be seventy kazillion other worlds, but not one is known to have the moral advancement of the Earth, so we're still central to the Universe.*) This impatience with ambiguity can be criticized in the phrase: absence of evidence is not evidence of absence.[3]

For instance, absence of evidence that it rained (i.e. water is the evidence) may be considered as positive evidence that it did not rain. Again, in science, such inferences are always made to some limited (sometimes extremely high) degree of probability and in this case absence of evidence is evidence of absence when the positive evidence should have been there but is not.

Arguments from ignorance can easily find their way into debates over the existence of God. It is a fallacy to draw conclusions based precisely on ignorance, since this does not satisfactorily address issues of philosophic burden of proof. But null results are not ignorance and can be used as evidence to achieve a given burden of proof.

[edit]Related terms

[edit]Contraposition and Transposition

Contraposition is a logically valid rule of inference that allows the creation of a new proposition from the negation and reordering of an existing one. The method applies to any proposition of the type *If A then B* and says that negating all the variables and switching them back to front leads to a new proposition i.e. *If Not-B then Not-A* that is just as true as the original one and that the first implies the second and the second implies the first.

Transposition is exactly the same thing described in a different language.

[edit]Absence of evidence

Absence of evidence is the absence, or lack of, any kind of evidence that may show, indicate, suggest, or be used to infer or deduce a fact.

[edit]Evidence of absence

Main article: Evidence of absence

Evidence of absence is evidence of any kind that can be used to infer or deduce the non-existence or non-presence of something. For instance, if a doctor does not find any *malignant cells* in a patient this null result (finding nothing) is evidence of absence of cancer, even though the doctor has not actually detected anything per se. Such inductive reasoning is important to empiricism and science, but has well established limitations. The challenge thus becomes to try to identify when a researcher has received a null result (found nothing) because the thing does not exist (evidence of absence), and when one simply lacks proper means of detection (absence of evidence).

[edit]Negative evidence

Negative evidence is sometimes used as an alternative to *absence of evidence* and is often meant to be synonymous with it. On the other hand, the term may also refer to evidence with a*negative* value, or *null* result equivalent to *evidence of absence*. It may even refer to positive evidence about something of an unpleasant nature.

[edit]Null result

Null result is a term often used in the field of science to indicate *evidence of absence*. A search for water on the ground may yield a null result (the ground is dry); therefore, it probably did not rain.

[edit]Related arguments

[edit]Argument from incredulity/Lack of imagination

Arguments from incredulity take the form:

1. P is too incredible (or: I cannot imagine how P could possibly be true); therefore P must be false.
2. I cannot imagine how P could possibly be false; therefore P must be true.

These arguments are similar to arguments from ignorance in that they too ignore and do not properly eliminate the possibility that something can be both incredible and still be true, or appear to be obvious and yet still be false.

[edit]Argument from self-knowing (auto-epistemic)

Arguments from self-knowing take the form:

1. If P were true then I would know it; in fact I do not know it; therefore P cannot be true.
2. If P were false then I would know it; in fact I do not know it; therefore P cannot be false.

In practice these arguments are often fallacious and rely on the veracity of the supporting premise. For example the argument that *If I had just sat on a wild porcupine then I would know it; in fact I do not know it; therefore I did not just sit on a wild porcupine* is probably not a fallacy and depends entirely on the veracity of the leading proposition that supports it.
(See Contraposition andTransposition in the *Related terms* section in this article.)

[edit]Distinguishing *absence of evidence* from *evidence of absence*

Absence of evidence is a condition in which no valid conclusion can be inferred from the *mere* absence of detection, normally due to doubt in the detection method. *Evidence of absence* is the successful variation: a conclusion that relies on specific knowledge in conjunction with negative detection to deduce the absence of something. An example of evidence of absence is checking your pockets for spare change and finding nothing, *but* being confident that the search would have found it if it was there.

[edit]Formal argument

By determining that a given experiment or method of detection is sensitive and reliable enough to detect the presence of X (when X is present) one can confidently exclude the possibility that X may be both undetected and present. This allows one to deduce that X cannot be present if a null result is received.

Thus there are only two possibilities, given a null result:

1. Nothing detected, and X is not present.
2. Nothing detected, but X *is* present (option eliminated by careful research design).

To the extent that option 2 can be eliminated, one can deduce that *if X is not detected then X is not present* and therefore the null result is evidence of absence.

[edit]Examples

[edit]Absence of evidence

(These examples contain or represent missing information.)

- Statements that begin with "I can't prove it but…" are often referring to some kind absence of evidence.
- "There is no evidence of foul play here" is a direct reference to the absence of evidence.
- "There is no evidence of aliens, and therefore, aliens do not exist" appeals to an absence of evidence

[edit]Negative results

- When the doctor says that the test results were negative, it is usually good news.
- Under "Termites" the inspector checked the box that read "no".
- The results of Michelson–Morley's experiment reported no shift at all in the interference pattern.

[edit]Evidence of absence

(These examples contain definite evidence that can be used to show, indicate, suggest, infer or deduce the non-existence or non-presence of something.)

- A biopsy shows the absence of malignant cells.
- The *null result* found by Michelson–Morley's famous experiment represents "strong evidence" that the luminiferous aether was not present.
- One very carefully inspects the back seat of one's car and finds no tigers.
- The train schedule does not say that the train stops here at 3:00pm on a Sunday.

[edit]Arguments from ignorance

(Draws a conclusion based on lack of knowledge or evidence without accounting for all possibilities)

- "I take the view that this lack (of enemy subversive activity in the west coast) is the most ominous sign in our whole situation. It convinces me more than perhaps any other factor that the sabotage we are to get, the Fifth Column activities are to get, are timed just like Pearl Harbor... I believe we are just being lulled into a false sense of security." – Then California's Attorney General Earl Warren (before a congressional hearing in San Francisco on 21 February 1942)

[edit]In the field of science

- One looks in the back seat of one's car and finds no adult-sized kangaroos and then uses this *negative/null adult-sized kangaroo detection results* in conjunction with the previously determined fact (or just plain old proposition) that adult-sized kangaroos, if present, cannot evade such detection, to deduce a new fact that there are indeed no adult-sized kangaroos present in the back seat of said car.

[edit]Principles in law

- The presumption of innocence, if present, effectively removes the possibility that the accused may be both guilty and unproven, from consideration in judgment, and as such the accused is considered *as* innocent unless proven guilty. (See decision table below)
    1. Innocent and unproven. Judged as innocent.
    2. Innocent and proven. Judged as guilty. (Jury is biased, misled, makes error; law is incorrect; false evidence fabricated etc.)
    3. Guilty and unproven. Judged as innocent. (Presumption of innocence)
    4. Guilty and proven. Judged as guilty. (*Innocent unless/until proven guilty* is a summary of this and easier to remember.)

[edit]Origin of the term

From "Fallacies: classical and contemporary readings By Hans V. Hansen, Robert C. Pinto"

> "It is generally accepted that the philosopher John Locke introduced the term in his Essay Concerning Human Understanding:"
>
> "Another way that Men ordinarily use to drive others, and force them to submit their Judgments. And receive the Opinion in debate, is to require the Adversary to admit what they alledge as a Proof, or assign a better. And this I call Argumentum ad Ignorantum" – John Locke

[edit]Sources

- Fallacies: classical and contemporary readings By Hans V. Hansen, Robert C. Pinto
- Introduction to Logic by Irving Marmer Copi.
- Essay Concerning Human Understanding Book IV – John Locke

[edit]See also

- Argument from silence
- False dilemma
- Indeterminacy problem
- Negation as failure

- Philosophic burden of proof

[edit]References

1. ^ "Argumentum ad Ignorantiam". *Philosophy 103: Introduction to Logic*. Lander University. 2004. Archived from the original on 30 April 2009. Retrieved 2009-04-29.
2. ^ "Appeal to Ignorance (Shifting the Burden of Proof)". Gracyk's Explanations of basic fallacies
3. ^ Sagan, Carl. "Chapter 12: The Fine Art of Baloney Detection". *The Demon-Haunted World*.

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[edit]External links

- Appeal to Authority Breakdown section on Appeal to Ignorance
- Fallacy Files article on Appeal to Ignorance

	[hide] V T E **Fallacies of relevance**
General	*Dicto simpliciter ad dictum secundum quid* (Accident) *Ad nauseam* (Argument from repetition) ***Argumentum ad ignorantiam*** (Argument from ignorance) *Argumentum e silentio* (Argument from silence) *Argumentum ad temperantiam* (Argument to moderation) *Argumentum ad populum* (Appeal to the people) Base rate Compound question Evidence of absence *Ignoratio elenchi* (Irrelevant conclusion)

	Invincible ignorance Loaded question Moralistic Naturalistic *Non sequitur* Proof by assertion Special pleading Straw man Two wrongs make a right
Appeals to emotion	Fear Flattery Nature Novelty Pity Ridicule Children's interests Invented here Island mentality Not invented here

	Repugnance Spite
Genetic fallacies	*Ad hominem* *Ad hominem tu quoque* Appeal to accomplishment Appeal to authority Appeal to etymology Appeal to motive Appeal to novelty Appeal to poverty Appeals to psychology Argumentum ad lapidem (Appeal to the stone) Appeal to tradition Appeal to wealth Association Bulverism Chronological snobbery *Ipse dixit* (Ipse-dixitism) Poisoning the well *Pro hominem*

	Reductio ad Hitlerum
Appeals to consequences	Appeal to force Wishful thinking

Ad nauseam

From Wikipedia, the free encyclopedia

(Redirected from Argument from repetition)

This article is about the Latin phrase. For the comedy album by Peter Cook and Dudley Moore, see Derek and Clive Ad Nauseam.

Look up ***ad nauseam*** in Wiktionary, the free dictionary.

Ad nauseam is a Latin term for something unpleasurable that has continued "to [the point of] nausea".[1][2] For example, the sentence, "This topic has been discussed *ad nauseam*", signifies that the topic in question has been discussed extensively, and that those involved in the discussion have grown tired of it.

[edit]Etymology

This term is defined by the American Heritage Dictionary as:

Argumentum ad nauseam or **argument from repetition** or **argumentum ad infinitum** is an argument made repeatedly (possibly by different people) until nobody cares to discuss it any more. This may sometimes, but not always, be a form of proof by assertion

[edit]See also

- List of Latin phrases
- Ad infinitum
- Ad libitum
- Big Lie (propaganda technique)
- Flood (The Young Ones)
- Godwin's law

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1. ^ "ad nauseam" definitions from Dictionary.com
2. ^ Ehrlich, Eugene (1985). *Amo, Amas, Amat and More.* New York: Harper & Row, Publishers. p. 25.

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Propaganda techniques

Ad hominem

Bandwagon effect

Big Lie

Blood libel

Buzzword

Card stacking

Censorship

Code word

Dog-whistle politics

Doublespeak

Euphemism

Framing

Glittering generality

Historical revisionism

Ideograph

Indoctrination

Lawfare

Lesser of two evils principle

Limited hangout

Loaded language

Loosely associated statements

Newspeak

Obscurantism

Plain folks

Public relations

Slogan

Spin

Weasel word

Argument from silence

From Wikipedia, the free encyclopedia

The *Transmission of the Lamp*compilation of Buddhist monk biographies is surprisingly silent on the "rules of purity" codes of 1103, yet the document of the 1103 codes exists.[1]

An **argument from silence** (also called ***argumentum e silentio*** in Latin) is generally a conclusion drawn based on the absence of evidence, rather than the existence of evidence.[2] In the field of classical studies, it often refers to the deduction from the lack of references to a subject in the available writings of an author to the conclusion that he was ignorant of it.[3]

Thus in historical analysis with an argument from silence, the absence of a reference to an event or a document is used to cast doubt on the event not mentioned.[4] While most historical approaches rely on what an author's works contain, an argument from silence relies on what the book or document does not contain.[4] This approach thus uses what an author "should have said" rather what is available in the author's extant writings.[5][4]

Some scholars such as Errietta Bissa flatly state that arguments from silence are not valid.[6] Other scholars such as David Henige state that, although risky, such arguments can at times shed light on historical events.[5] Yifa has pointed out the perils of arguments from silence, in that although no references appear to the "Rules of purity" codes of monastic conduct of 1103 in the Transmission of the Lamp, or any of the Pure Land documents, a copy of the code in which the author identifies himself exists.[1]

Contents

[hide]

1 Historical analysis

2 Legal aspects

3 See also

4 References

[edit]Historical analysis

An argument from silence can be convincing when mentioning a fact can be seen as so natural that its omission is a good reason to assume ignorance. For example, while the editors of Yerushalmi and Bavli mention the other community, most scholars believe these documents were written independently. Louis Jacobs writes, "If the editors of either had had access to an actual text of the other, it is inconceivable that they would not have mentioned this. Here the argument from silence is very convincing."[7]

Yifa points out that arguments from silence are often less than conclusive, e.g. the lack of references to a compilation of a set of monastic codes by contemporaries or even by disciples does not mean that it never existed.[1] This is well as illustrated by the case of Changlu Zongze's "Rules of purity" which he wrote for the Chan monastery in 1103. One of his contemporaries wrote a preface to a collection of his writings neglected to mention his code. And none of his biographies nor the documents of the Transmission of the Lamp, nor the Pure Land documents (which exalt him) refer to Zongze's collection of a monastic code.[1] However a copy of the code in which the author identifies himself exists.[1]

Frances Wood based her controversial book Did Marco Polo go to China? on arguments from silence.[5] Woods argued that Marco Polo never went to China and fabricated his accounts because he failed to mention elements from the visual landscape such as tea, did not record the Great Wall and neglected to record practices such as foot-binding. She argued that no outsider could spend 15 years in China and not observe and record these elements. Most historians disagree with Wood's reasoning.[5]

[edit]Legal aspects

In the context of Morocco's Truth Commission of 1999 regarding torture and secret detentions, Wu and Livescu state that the fact that someone remained silent is no proof of their ignorance about a specific piece of information. They point out that the absence of records about the torture of prisoners under the secret detention program is no proof that such detentions did not involve torture, or that some detentions did not take place.[8]

[edit]See also

Philosophy portal

- Argument from ignorance
- Evidence of absence
- Negative proof
- Russell's teapot

[edit]References

1. ^ a b c d e *The origins of Buddhist monastic codes in China*by Yifa, Zongze 2002 ISBN 0-8248-2494-6 page 32.
2. ^ "argumentum e silentio *noun phrase*" *The Oxford Essential Dictionary of Foreign Terms in English.* Ed. Jennifer Speake. Berkley Books, 1999.
3. ^ "silence, the argument from". *The Concise Oxford Dictionary of the Christian Church.* Ed. E. A. Livingstone. Oxford University Press, 2006.
4. ^ a b c *Seven Pillories of Wisdom* by David R. Hall 1991 ISBN 0-86554-369-0 pages 55-56.
5. ^ a b c d *Historical evidence and argument* by David P. Henige 2005 ISBN 978-0-299-21410-4 page 176.
6. ^ *Governmental intervention in foreign trade in archaïc and classical Greece* by Errietta M. A. Bissa ISBN 90-04-17504-0page 21.
7. ^ "Talmud". *A Concise Companion to the Jewish Religion.* Louis Jacobs. Oxford University Press, 1999.
8. ^ *Human Rights, Suffering, and Aesthetics in Political Prison Literature* by Yenna Wu, Simona Livescu 2011 ISBN 0-7391-6741-3 pages 86-90.

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V

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Fallacies of relevance

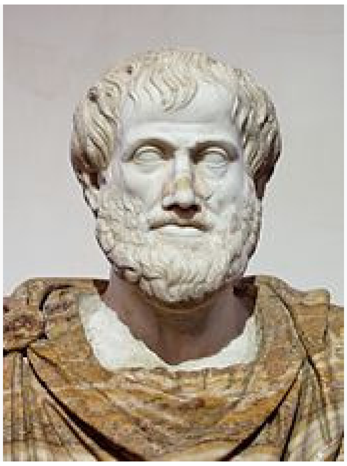
General	*Dicto simpliciter ad dictum secundum quid* (Accident) *Ad nauseam* (Argument from repetition) *Argumentum ad ignorantiam* (Argument from ignorance) ***Argumentum e silentio*** (Argument from silence) *Argumentum ad temperantiam* (Argument to moderation) *Argumentum ad populum* (Appeal to the people) Base rate Compound question Evidence of absence *Ignoratio elenchi* (Irrelevant conclusion) Invincible ignorance Loaded question Moralistic Naturalistic *Non sequitur* Proof by assertion Special pleading Straw man Two wrongs make a right

Appeals to emotion	Fear Flattery Nature Novelty Pity Ridicule Children's interests Invented here Island mentality Not invented here Repugnance Spite
Genetic fallacies	*Ad hominem* *Ad hominem tu quoque* Appeal to accomplishment Appeal to authority Appeal to etymology Appeal to motive Appeal to novelty

	Appeal to poverty Appeals to psychology Argumentum ad lapidem (Appeal to the stone) Appeal to tradition Appeal to wealth Association Bulverism Chronological snobbery *Ipse dixit* (Ipse-dixitism) Poisoning the well *Pro hominem* *Reductio ad Hitlerum*
Appeals to consequences	Appeal to force Wishful thinking

Begging the question

From Wikipedia, the free encyclopedia



Bust of Aristotle, whose *Prior Analytics* contained an early discussion of this fallacy.

Begging the question (Latin ***petitio principii***, "assuming the initial point") is a type of informal fallacy in which a proposition relies on an implicit premise *within itself* to establish the truth of that same proposition. In other words, it is a statement that refers to its own assertion to prove the assertion. Such arguments are essentially of the form "A is true because A is true" though rarely is such an argument stated as such. Often the premise 'A' is only one of many premises that go into proving that 'A' is true as a conclusion.

The first known definition in the West is by Aristotle around 350 BC, in his book *Prior Analytics*, where he classified it as a material fallacy (i.e., not formal). Aristotle did not consider begging the question to be a species of circular argument, *circulus in probando* (Latin, "circle in proving") or circular reasoning, as do some modern authors.[1]

Contents

[hide]

1 Definition
2 History
3 Related fallacies
4 Modern usage
5 See also
6 Notes
7 References

[edit]Definition

The fallacy of *petitio principii*, or "begging the question", is committed "when a proposition which requires proof is assumed without proof", or more generally denotes when an assumption is used, "in some form of the very proposition to be proved, as a premise from which to deduce it".[2] Thus, insofar as *petitio principii* refers to arguing for a conclusion that has already been assumed in the premise, this fallacy consists of "begging" the listener to accept the "question" (proposition) before the labor of logic is undertaken. The fallacy may be committed in various ways.

When the fallacy of begging the question is committed in a single step, it is sometimes called a *hysteron proteron*,[3][4] as in the statement "Opium induces sleep because it has a *soporific*quality".[5] Such fallacies may not be immediately obvious due to the use of synonyms or synonymous phrases; one way to beg the question is to make a statement first in concrete terms, then in abstract ones, or vice-versa.[5] Another is to "bring forth a proposition expressed in words of Saxon origin, and give as a reason for it the very same proposition stated in words of Normanorigin",[6] as in this example: "To allow every man an unbounded freedom of speech must always be, on the whole, advantageous to the State, for it is highly conducive to the interests of the community that each individual should enjoy a liberty perfectly unlimited of expressing his sentiments".[7]

When the fallacy of begging the question is committed in more than one step, it is sometimes referred to as *circulus in probando* or reasoning in a circle[3] but incorrectly so, if this fallacy is considered under the definition Aristotle gave in *Prior Analytics*.[1]

"Begging the question" can also refer to making an argument in which the premise "is different from the conclusion ... but is controversial or questionable for the same reasons that typically might lead someone to question the conclusion".[8]

…[S]eldom is anyone going to simply place the conclusion word-for-word into the premises … Rather, an arguer might use phraseology that conceals the fact that the conclusion is masquerading as a premise. The conclusion is rephrased to look different and is then placed in the premises.
—Paul Herrick[9]

An example of "Begging the Question":

Speaker 1: "Unbelief is disobedience to God's commands."

Speaker 2: "Says who?"

Speaker 1: "Says the Word of God Himself."

[edit]History

The term was translated into English from Latin in the 16th century. The Latin version, *petitio principii,* can be interpreted in different ways. *Petitio* (from *peto*), in the post-classical context in which the phrase arose, means "assuming" or "postulating," but in the older classical sense means "petition," "request," or "beseeching."[10] *Principii*, genitive of *principium*, means "beginning," "basis," or "premise" (of an argument). Literally *petitio principii* means "assuming the premise" or "assuming the original point," or, alternately, "a request for the beginning or premise;" that is, the premise depends on the truth of the very matter in question.

The Latin phrase comes from the Greek *en archei aiteisthai* in Aristotle's *Prior Analytics* II xvi:

Begging or assuming the point at issue consists (to take the expression in its widest sense) [of] failing to demonstrate the required proposition. But there are several other ways in which this may happen; for example, if the argument has not taken syllogistic form at all, he may argue from premises which are less known or equally unknown, or he may establish the antecedent by means of its consequents; for demonstration proceeds from what is more certain and is prior. Now begging the question is none of these. [...] If, however, the relation of B to C is such that they are identical, or that they are clearly convertible, or that one applies to the other, then he is begging the point at issue.... [B]egging the question is proving what is not self-evident by means of itself...either because predicates which are identical belong to the same subject, or because the same predicate belongs to subjects which are identical.

Thomas Fowler believed that *Petitio Principii* would be more properly called *Petitio Quæsiti*, which is literally "begging the question".[11]

[edit]Related fallacies

Main articles: Circular reasoning, Complex question, and Ignoratio elenchi

Circular reasoning is a fallacy in which "the reasoner begins with what he or she is trying to end up with".[12] The individual components of a circular argument can be logically valid because if the premises are true, the conclusion must be true, and will not lack relevance. However, circular reasoning is not persuasive because, if the conclusion is doubted, the premise which leads to it will also be doubted.[13]

Begging the question is similar to the complex question or fallacy of many questions: questioning that presupposes something that would not be acceptable to everyone involved. For example, "Is Mary wearing a blue or a red dress?" is fallacious because it artificially restricts the possible responses to a blue or red dress. If the person being questioned wouldn't necessarily consent to those constraints, the question is fallacious.[14][15]

Fallacies of Assumption are those errors in reasoning which occur when the assumptions on which an argument rests are not clearly distinguished from the judgments of which the argument consists. An assumption, in this connection, is anything we take for granted, but do not assert, about the subject matter of an argument. It is the equivalent of what we… speak of as the universe of discourse. Interpreted from this point of view, it is readily seen that an assumption is not an assertion, and forms no part of the asserted contents of an argument, although, as we have seen, it has a relation to the argument, a relation which is indicated with sufficient clearness by saying that it points out the sphere of reference in which what is asserted may or not be accepted. Now it is a misinterpretation of the relation between what an argument assumes and what it asserts that lies at the foundation of the fallacies that we have here to consider. Thus, when what is taken for granted or assumed is allowed to function in any part of an argument as an assertion or judgment, or when the assumption on which an argument proceeds is ambiguous, the resulting fallacy is one of assumption.

Petitio Princpii is the name of an argument which assumes the conclusion that is to be proved… “the surreptitious assumption of a truth you are pretending to prove.” Since, then, the fallacy is one of assumption… its source must be found, not in what is definitely asserted, but in the world of reality or existence in which what is asserted has a definite meaning or fulfillment, that is to say, in the universe of discourse from the standpoint of which the argument is interpreted… Whenever it exists, the fallacy directs attention to the fact that the truth of what an argument asserts depends in part upon what assumptions the argument makes; and, in view of the nature of an argument, it follows that when assumptions are put forward as reasons we necessarily fail to establish a conclusion, and fall into the merest dogmatism unless we are willing to have these assumptions called into question. … Now, when this happens, when in the course of argument assumptions take the place of reasoned judgments, the argument is fallacious because, for the reason assigned, it involves a *petitio principii*… When the fallacy of *petitio principii* is committed in a single step it is called… *hysteron proteron*… and when it involves more than a single step it is called *circulus in probando* or reasoning in a circle.

Closely connected with the foregoing is the fallacy of the Complex Question. By a complex question, in the broadest meaning of that term, is meant one that suggests its own answer. Any question, for instance, that forces us to select, and assert in our answer to it, one of the elements of the question itself, while some other possibility is really open, is complex in the sense in which that term is here employed. If, for example, one were to ask… if your favourite colour were red or blue, or if you had given up a particular bad habit, he would be guilty of the fallacy of the complex question, if, in each case, the alternatives, as a matter of fact, were more numerous than, or were in any way different from, those stated in the question. Any leading question which complicates an issue by over simplification is fallacious for the same reason. Now, in the light of what we have said with respect to the *petitio principii*, it is not difficult to see that the fallacy of the complex question is occasioned by the character of the assumption on which the question rests. In the *petitio principii* an assumption with respect to the subject-matter of an argument functions as a premise, in the complex question it is a similar assumption that shuts out some of the material possibilities of a situation and confines an issue within too narrow limits. As in the former case, so here, the only way of meeting the difficulty is to raise the previous question, that is, to call the assumption which lies back of the fallacy into question.

Ignoratio Elenchi, according to Aristotle, is a fallacy which arises from “ignorance of the nature of refutation.” In order to refute an assertion, Aristotle says we must prove its contradictory; the proof, consequently, of a proposition which stood in any other relation than that to the original, would be an *ignoratio elenchi*… Since Aristotle, the scope of the fallacy has been extended to include all cases of proving the wrong point… “I am required to prove a certain conclusion; I prove, not that, but one which is likely to be mistaken for it; in that lies the fallacy… For instance, instead of proving that ‘this person has committed an atrocious fraud,’ you prove that ‘this fraud he is accused of is atrocious;’” … The nature of the fallacy, then, consists in substituting for a certain issue another which is more or less closely related to it, and arguing the substituted issue. The fallacy does not take into account whether the arguments do or do not really support the substituted issue, it only calls attention to the fact that they do not constitute a proof of the original one… It is a particularly prevalent and subtle fallacy and it assumes a great variety of forms. But whenever it occurs and whatever form it takes, it is brought about by an assumption that leads the person guilty of it to substitute for a definite subject of inquiry another which is in close relation with it. In the *petitio principii* the fallacy may be described as an assumption of the premises; in the

> complex question, as an assumption of the answer; and in the *ignoratio elenchi*, as an assumption of the question at issue.[16]
>
> —Arthur Ernest Davies, *"Fallacies" in A Text-Book of Logic*

[edit]Modern usage

Many English speakers use "begs the question" to mean "raises the question," "impels the question," or even "invites the question," and follow that phrase with the question raised,[17] for example, "this year's deficit is half a trillion dollars, which begs the question: how are we ever going to balance the budget?" Philosophers and many grammarians deem such usage incorrect.[18][19] Academic linguist Mark Liberman recommends avoiding the phrase entirely, noting that because of shifts in usage in both Latin and English over the centuries, the relationship of the literal expression to its intended meaning is unintelligible and therefore it is now "such a confusing way to say it that only a few pedants understand the phrase."[10] It is, however, clear and acceptable in normal debate among those who do not base their use of language on classical philosophical dicta, particularly when the English translation does not faithfully reflect the sense of the original.

[edit]See also

- Ambiguity
- Catch-22 (logic)
- Circular definition
- Euphemism treadmill
- Fallacies of definition
- Polysyllogism
- Regress argument (diallelus)
- Tautology (logic)

[edit]Notes

1. ^ a b The *petitio principii* or *Begging the question* is studied in *Prior Analytics* II, 64b, 34 – 65a, 9 and it is considered a material fallacy. The circular argument, *circulus in probando* or *circular reasoning*, is explained in *Prior Analytics* II, 57b, 18 – 59b, 1 and albeit unpersuasive, it is never a fallacy *per se*. However, some author consider begging the question to be a form of circular reasoning, for example: Bradley Dowden, "Fallacies" in *Internet Encyclopedia of Philosophy*.
2. ^ Welton (1905), 279.
3. ^ a b Davies (1915), 572.
4. ^ Welton (1905), 280-282.
5. ^ a b Welton (1905), 281.
6. ^ Gibson (1908), 291.

7. ^ Richard Whately, *Elements of Logic* (1826) quoted in Gibson (1908), 291.
8. ^ Kahane and Cavender (2005), 60.
9. ^ Herrick (2000) 248.
10. ^ *a* *b* Liberman, Mark (29 April 2010). "'Begging the question': we have answers". *Language Log*. Retrieved 12 January 2012.
11. ^ Fowler, Thomas (1887). *The Elements of Deductive Logic, Ninth Edition* (p. 145). Oxford, England: Clarendon Press.
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14. ^ Meyer, M. (1988). *Questions and Questioning*. Foundations of Communication. W. de Gruyter. pp. 198-199. ISBN 9783110106800. LCCN lc88025603.
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16. ^ Davies, Arthur Ernest (1915). *A Text-Book of Logic*. R. G. Adams and company. pp. 569-576. LCCN 15027713.
17. ^ see definitions at Wiktionary and at The Free Dictionary (accessed 30th May 2011); each source gives both definitions.
18. ^ Follett (1966), 228; Kilpatrick (1997); Martin (2002), 71; Safire (1998).
19. ^ Brians, Common Errors in English Usage: Online Edition (full text of book: 2nd Edition, November, 2008, William, James & Company)[1] (accessed 1 July 2011)

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[show]

Philosophic burden of proof

From Wikipedia, the free encyclopedia

(Redirected from Philosophical burden of proof)

This article is about burden of proof as a philosophical concept. For other uses, see Burden of proof (disambiguation).

The **philosophical burden of proof** or **onus (probandi)** is the obligation on a party in an epistemic dispute to provide sufficient warrant for their position.

Contents

[hide]

1 Holder of the burden

2 In public discourse

3 See also

4 References

[edit]Holder of the burden

When debating any issue, there is an implicit burden of proof on the person asserting a claim. "If this responsibility or burden of proof is shifted to a critic, the fallacy of appealing to ignorance is committed".[1] This burden does not necessarily require a mathematical or strictly logical proof, although many strong arguments do rise to this level (such as in logical syllogisms). Rather, the evidential standard required for a given claim is determined by convention or community standards, with regard to the context of the claim in question.[2][3]

[edit]In public discourse

Burden of proof is also an important concept in the public arena of ideas. Assuming both sides have agreed to reasoned discourse,[4] the *burden of proof* can serve as an effective tool to ensure that all relevant arguments from both sides of an issue are introduced. After common assumptions are established the mechanism of burden of proof takes over to keep those engaged in discourse focused on providing evidential warrant and cogent arguments for their positions.[5][6][7]

[edit]See also

- Evidentialism
- Legal burden of proof
- Metaphysics
- Parsimony
- Pragma-dialectics
- Scientific consensus
- Scientific method
- Statistical hypothesis testing
- Russell's teapot

[edit]References

1. ^ Michalos, Alex. 1969. Principles of Logic. Englewood Cliffs: Prentice-Hall. p 370 - “usually one who makes an assertion must assume the responsibility of defending it. If this responsibility or burden of proof is shifted to a critic, the fallacy of appealing to ignorance is committed.”
2. ^ Leite, Adam. 2005. “A Localist Solution to the Regress of Justification.” Australasian Journal of Philosophy 83: p. 418 - "[t]he point of articulating reasons in defense of one’s belief is to establish that one is justified in believing as one does."
3. ^ Leite, Adam. 2005. “A Localist Solution to the Regress of Justification.” Australasian Journal of Philosophy 83: p. 403 - "justificatory conversation...[is]...characterized by a person’s sincere attempt to vindicate his or her entitlement to a belief by providing adequate reasons in its defense and responding to objections"

4. ^ Goldman, Alvin. 1994. “Argumentation and Social Epistemology.” Journal of Philosophy, 91: 27-49.
5. ^ Eemeren, Frans van, and Grootendorst, Rob. 2004. A Systematic Theory of Argumentation. Cambridge: Cambridge University Press. p. 60 - "[t]here is no point in venturing to resolve a difference of opinion through an argumentative exchange of views if there is no mutual commitment to a common starting point"
6. ^ Brandom, Robert. 1994. Making it Explicit. Cambridge: Harvard University Press. p. 222 - "[t]here are sentence types that would require a great deal of work for one to get into a position to challenge, such as 'Red is a color,' 'There have been black dogs,' 'Lighting frequently precedes thunder,' and similar commonplaces. These are treated as 'free moves' by members of our speech community --- they are available to just about anyone any time to use as premises, to assert unchallenged.",
7. ^ Adler, Jonathan. 2002. Belief’s Own Ethics. Cambridge: MIT Press. pp. 164-167

Scientific method

From Wikipedia, the free encyclopedia

(Redirected from Scientific burden of evidence)

"Scientific study" redirects here. For observational studies, see observational study.

Part of a series on

Science

Formal sciences[show]

Physical sciences[show]

Life sciences[show]

Social and behavioural sciences[show]

Applied sciences[show]

Interdisciplinarity[show]

Philosophy and history of science[show]

- Science portal
- Category

- v

- T
- E

The scientific method (or simply **scientific method**) is a body of techniques for investigating phenomena, acquiring new knowledge, or correcting and integrating previous knowledge.[1] To be termed scientific, a method of inquiry must be based on empirical and measurableevidence subject to specific principles of reasoning.[2] The *Oxford English Dictionary* says that the scientific method is: "a method or procedure that has characterized natural science since the 17th century, consisting in systematic observation, measurement, and experiment, and the formulation, testing, and modification of hypotheses."[3]

The chief characteristic which distinguishes the scientific method from other methods of acquiring knowledge is that scientists seek to let reality speak for itself, supporting a theory when a theory's predictions are confirmed and challenging a theory when its predictions prove false. Although procedures vary from one field of inquiry to another, identifiable features distinguish scientific inquiry from other methods of obtaining knowledge. Scientific researchers propose hypotheses as explanations of phenomena, and design experimental studies to test these hypotheses via predictions which can be derived from them. These steps must be repeatable, to guard against mistake or confusion in any particular experimenter. Theories that encompass wider domains of inquiry may bind many independently derived hypotheses together in a coherent, supportive structure. Theories, in turn, may help form new hypotheses or place groups of hypotheses into context.

Scientific inquiry is generally intended to be as objective as possible in order to reduce biased interpretations of results. Another basic expectation is to document, archive and share all data and methodology so they are available for careful scrutiny by other scientists, giving them the opportunity to verify results by attempting toreproduce them. This practice, called *full disclosure*, also allows statistical measures of the reliability of these data to be established (when data is sampled or compared to chance).

Contents

[hide]

1 Overview
- ○ 1.1 DNA example
- ○ 1.2 Other components

2 Scientific inquiry
- ○ 2.1 Properties of scientific inquiry
- ○ 2.2 Beliefs and biases

3 Elements of the scientific method
  - ○ 3.1 Characterizations
  - ○ 3.2 Hypothesis development
  - ○ 3.3 Predictions from the hypothesis
  - ○ 3.4 Experiments
  - ○ 3.5 Evaluation and improvement
  - ○ 3.6 Confirmation

4 Models of scientific inquiry
  - ○ 4.1 Classical model
  - ○ 4.2 Pragmatic model
  - ○ 4.3 Computational approaches

5 Communication and community
  - ○ 5.1 Peer review evaluation
  - ○ 5.2 Documentation and replication
  - ○ 5.3 Dimensions of practice

6 Philosophy and sociology of science
  - ○ 6.1 Role of chance in discovery

7 History

8 Relationship with mathematics

9 See also
  - ○ 9.1 Problems and issues
  - ○ 9.2 History, philosophy, sociology

10 Notes

11 References

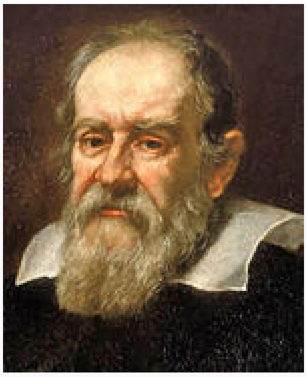
12 Further reading

13 External links

Overview

See also: History of scientific method and Timeline of the history of scientific method

Ibn al-Haytham (Alhazen), 965–1039 Iraq. The Arab scholar who lived during theIslamic golden age is considered by some to be the father of modern scientific methodology.[4]



According to Morris Kline,[5] "Modern science owes its present flourishing state to a new scientific method which was fashioned almost entirely by Galileo Galilei." Dudley Shapere[6]takes a more measured view of Galileo's contribution.

Johannes Kepler (1571–1630). "Kepler shows his keen logical sense in detailing the whole process by which he finally arrived at the true orbit. This is the greatest piece of Retroductive reasoning ever performed." —C. S. Peirce, c. 1896, on Kepler's reasoning through explanatory hypotheses[7]

Scientific method has been practiced in some form for at least one thousand years[4] and is the process by which science is carried out. Because science builds on previous knowledge, it consistently improves our understanding of the world. The scientific method also improves itself in the same way, meaning that it gradually becomes more effective at generating new knowledge. For example, the concept of falsification (first proposed in 1934) reduces confirmation bias by formalizing the attempt to *disprove* hypotheses rather than prove them.[8]

The overall process involves making conjectures (hypotheses), deriving predictions from them as logical consequences, and then carrying out experiments based on those predictions to determine whether the original conjecture was correct. There are difficulties in a formulaic statement of method, however. Though the scientific method is often presented as a fixed sequence of steps, they are better considered as general principles.[9] Not all steps take place in every scientific inquiry (or to the same degree), and not always in the same order. As noted by William Whewell (1794–1866), "invention, sagacity, [and] genius"[10] are required at every step:

Formulate a question: The question can refer to the explanation of a specific *observation*, as in "Why is the sky blue?", but can also be open-ended, as in "Does sound travel faster in air than in water?" or "How can I design a drug to cure this particular disease?" This stage also involves looking up and evaluating previous evidence from other scientists, as well as considering one's own experience. If the answer is already known, a different question that builds on the previous evidence can be posed. When applying the scientific method to scientific research, determining a good question can be very difficult and affects the final outcome of the investigation.[11]

Hypothesis: An hypothesis is a conjecture, based on the knowledge obtained while formulating the question, that may explain the observed behavior of a part of our universe. The hypothesis might be very specific, e.g., Einstein's equivalence principle or Francis Crick's "DNA makes RNA makes protein",[12] or it might be broad, e.g., unknown species of life dwell in the unexplored depths of the oceans. A statistical hypothesis is a conjecture about some population. For example, the population might be people with a particular disease. The conjecture might be that a new drug will cure the disease in some of those people. Terms commonly associated with statistical hypotheses are null hypothesis and alternative hypothesis. A null hypothesis is the conjecture that the statistical hypothesis is false, e.g., that the new drug does nothing and that any cures are due to chance effects. Researchers normally want to show that the null hypothesis is false. The alternative hypothesis is the desired outcome, e.g., that the drug does better than chance. A final point: a scientific hypothesis must befalsifiable, meaning that one can identify a possible outcome of an experiment that conflicts with predictions deduced from the hypothesis; otherwise, it cannot be meaningfully tested.

Prediction: This step involves determining the logical consequences of the hypothesis. One or more predictions are then selected for further testing. The less likely that the prediction would be correct simply by coincidence, the stronger evidence it would be if the prediction were fulfilled; evidence is also stronger if the answer to the prediction is not already known, due to the effects of hindsight bias (see also postdiction). Ideally, the prediction must also distinguish the hypothesis from likely alternatives; if two hypotheses make the same prediction, observing the prediction to be correct is not evidence for either one over the other. (These statements about the relative strength of evidence can be mathematically derived using Bayes' Theorem.)

Test: This is an investigation of whether the real world behaves as predicted by the hypothesis. Scientists (and other people) test hypotheses by conductingexperiments. The purpose of an experiment is to determine whether observations of the real world agree with or conflict with the predictions derived from an hypothesis. If they agree, confidence in the hypothesis increases; otherwise, it decreases. Agreement does not assure that the hypothesis is true; future experiments may reveal problems. Karl Popper advised scientists to try to falsify hypotheses, i.e., to search for and test those experiments that seem most doubtful. Large numbers of successful confirmations are not convincing if they arise from experiments that avoid risk.[13] Experiments should be designed to minimize possible errors, especially through the use of appropriate scientific controls. For example, tests of medical treatments are commonly run as double-blind tests. Test personnel, who might unwittingly reveal to test subjects which samples are the desired test drugs and which are placebos, are kept ignorant of which are which. Such hints can bias the responses of the test subjects. Failure of an experiment does not necessarily mean the hypothesis is false. Experiments always depend on several hypotheses, e.g., that the test equipment is working properly, and a failure may be a failure of one of the auxiliary hypotheses. (See the Duhem-Quine thesis.) Experiments can be conducted in a college lab, on a kitchen table, at CERN's Large Hadron Collider, at the bottom of an ocean, on Mars (using one of the working rovers), and so on. Astronomers do experiments, searching for planets around distant stars. Finally, most individual experiments address highly specific topics for reasons of practicality. As a result, evidence about broader topics is usually accumulated gradually.

Analysis: This involves determining what the results of the experiment show and deciding on the next actions to take. The predictions of the hypothesis are compared to those of the null hypothesis, to determine which is better able to explain the data. In cases where an experiment is repeated many times, astatistical analysis such as a chi-squared test may be required. If the evidence has falsified the hypothesis, a new hypothesis is required; if the experiment supports the hypothesis but the evidence is not strong enough for high confidence, other predictions from the hypothesis must be tested. Once a hypothesis is strongly supported by evidence, a new question can be asked to provide further insight on the same topic. Evidence from other scientists and one's own experience can be incorporated at any stage in the process. Many iterations may be required to gather sufficient evidence to answer a question with confidence, or to build up many answers to highly specific questions in order to answer a single broader question.

This model underlies the scientific revolution. One thousand years ago, Alhazen demonstrated the importance of forming questions and subsequently testing them,[4] an approach which was advocated by Galileo in 1638 with the publication of *Two New Sciences*.[14] The current method is based on a hypothetico-deductive model[15] formulated in the 20th century, although it has undergone significant revision since first proposed (for a more formal discussion, see below).

DNA example

The basic elements of the scientific method are illustrated by the following example from the discovery of the structure of DNA:

- *Question*: Previous investigation of DNA had determined its chemical composition (the four nucleotides), the structure of each individual nucleotide, and other properties. It had been identified as the carrier of genetic information by the Avery–MacLeod–McCarty experiment in 1944,[16] but the mechanism of how genetic information was stored in DNA was unclear.
- *Hypothesis*: Francis Crick and James D. Watson hypothesized that DNA had a helical structure.[17]
- *Prediction*: If DNA had a helical structure, its X-ray diffraction pattern would be X-shaped.[18][19] This prediction was determined using the mathematics of the helix transform, which had been derived by Cochran, Crick and Vand[20] (and independently by Stokes).
- *Experiment*: Rosalind Franklin crystallized pure DNA and performed X-ray diffraction to produce photo 51. The results showed an X-shape.
- *Analysis*: When Watson saw the detailed diffraction pattern, he immediately recognized it as a helix.[21][22] He and Crick then produced their model, using this information along with the previously known information about DNA's composition and about molecular interactions such as hydrogen bonds.[23]

The discovery became the starting point for many further studies involving the genetic material, such as the field of molecular genetics, and it was awarded the Nobel Prize in 1962. Each step of the example is examined in more detail later in the article.

Other components

The scientific method also includes other components required even when all the iterations of the steps above have been completed:

Replication: If an experiment cannot be repeated to produce the same results, this implies that the original results were in error. As a result, it is common for a single experiment to be performed multiple times, especially when there are uncontrolled variables or other indications of experimental error. For significant or surprising results, other scientists may also attempt to replicate the results for themselves, especially if those results would be important to their own work.

External review: The process of peer review involves evaluation of the experiment by experts, who give their opinions anonymously to allow them to give unbiased criticism. It does not certify correctness of the results, only that the experiments themselves were sound (based on the description supplied by the experimenter). If the work passes peer review, which may require new experiments requested by the reviewers, it will be published in a peer-reviewed scientific journal. The specific journal that publishes the results indicates the perceived quality of the work.

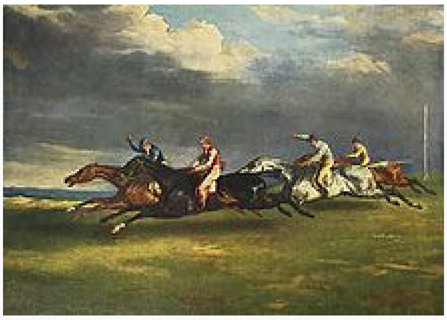
Data recording and sharing: Scientists must record all data very precisely in order to reduce their own bias and aid in replication by others, a requirement first promoted by Ludwik Fleck(1896–1961) and others.[24] They must supply this data to other scientists who wish to replicate any results, extending to the sharing of any experimental samples that may be difficult to obtain.[25]

Scientific inquiry

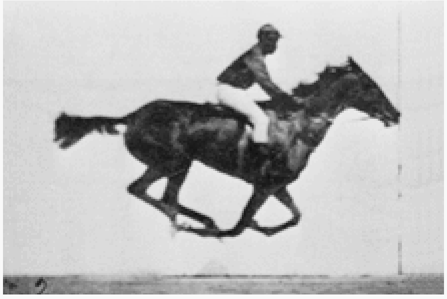
The goal of a scientific inquiry is to obtain knowledge in the form of testable explanations that can predict the results of future experiments. This allows scientists to gain an understanding of reality, and later use that understanding to intervene in its causal mechanisms (such as to cure disease). The better an explanation is at making predictions, the more useful it is, and the more likely it is to be correct. The most successful explanations, which explain and make accurate predictions in a wide range of circumstances, are called scientific theories.

Most experimental results do not result in large changes in human understanding; improvements in theoretical scientific understanding is usually the result of a gradual synthesis of the results of different experiments, by various researchers, across different domains of science.[26] Scientific models vary in the extent to which they have been experimentally tested and for how long, and in their acceptance in the scientific community. In general, explanations become accepted by a scientific community as evidence in favor is presented, and as presumptions that are inconsistent with the evidence are falsified.

Properties of scientific inquiry



Flying gallop falsified; see image below.



Eadweard Muybridge's studies of ahorse galloping

Scientific knowledge is closely tied to empirical findings, and always remains subject to falsification if new experimental observation incompatible with it is found. That is, no theory can ever be considered completely certain, since new evidence falsifying it might be discovered. If such evidence is found, a new theory may be proposed, or (more commonly) it is found that minor modifications to the previous theory are sufficient to explain the new evidence. The strength of a theory is related to how long it has persisted without falsification of its core principles.

Confirmed theories are also subject to subsumption by more accurate theories. For example, thousands of years of scientific observations of the planets were explained almost perfectly by Newton's laws. However, these laws were then determined to be special cases of a more general theory (relativity), which explained both the (previously unexplained) exceptions to Newton's laws as well as predicting and explaining other observations such as the deflection of light by gravity. Thus independent, unconnected, scientific observations can be connected to each other, unified by principles of increasing explanatory power.[27]

Since every new theory must explain even more than the previous one, any successor theory capable of subsuming it must meet an even higher standard, explaining both the larger, unified body of observations explained by the previous theory and unifying that with even more observations. In other words, as scientific knowledge becomes more accurate with time, it becomes increasingly harder to produce a more successful theory, simply because of the great success of the theories that already exist.[27] For example, the Theory of Evolution explains the diversity of life on Earth, how species adapt to their environments, and many other patterns observed in the natural world;[28][29] its most recent major modification was unification with genetics to form the modern evolutionary synthesis. In subsequent modifications, it has also subsumed aspects of many other fields such as biochemistry andmolecular biology.

Beliefs and biases

Scientific methodology directs that hypotheses be tested in controlled conditions which can be reproduced by others. The scientific community's pursuit of experimental control and reproducibility diminishes the effects of cognitive biases.

For example, pre-existing beliefs can alter the interpretation of results, as in confirmation bias; this is a heuristic that leads a person with a particular belief to see things as reinforcing their belief, even if another observer might disagree (in other words, people tend to observe what they expect to observe).

A historical example is the conjecture that the legs of a galloping horse are splayed at the point when none of the horse's legs touches the ground, to the point of this image being included in paintings by its supporters. However, the first stop-action pictures of a horse's gallop by Eadweard Muybridge showed this to be false, and that the legs are instead gathered together.[30]

Another important human bias that plays a role is a preference for new, surprising statements (see appeal to novelty), which can result in a search for evidence that the new is true.[1]

In contrast to the requirement for scientific knowledge to correspond to reality, beliefs based on myth or stories can be believed and acted upon irrespective of truth,[31] often taking advantage of the narrative fallacy that when narrative is constructed its elements become easier to believe.[32][33] Myths intended to be taken as true must have their elements assumed *a priori*, while science requires testing and validation *a posteriori* before ideas are accepted.

Elements of the scientific method

There are different ways of outlining the basic method used for scientific inquiry. The scientific community and philosophers of science generally agree on the following classification of method components. These methodological elements and organization of procedures tend to be more characteristic of natural sciences than social sciences. Nonetheless, the cycle of formulating hypotheses, testing and analyzing the results, and formulating new hypotheses, will resemble the cycle described below.

Four essential elements[34][35][36] of the scientific method[37] are iterations,[38][39] recursions,[40] interleavings, or orderings of the following:

- Characterizations (observations,[41] definitions, and measurements of the subject of inquiry)
- Hypotheses[42][43] (theoretical, hypothetical explanations of observations and measurements of the subject)[44]
- Predictions (reasoning including logical deduction[45] from the hypothesis or theory)
- Experiments[46] (tests of all of the above)

Each element of the scientific method is subject to peer review for possible mistakes. These activities do not describe all that scientists do (see below) but apply mostly to experimental sciences (e.g., physics, chemistry, and biology). The elements above are often taught in the educational system as "the scientific method".[47]

The scientific method is not a single recipe: it requires intelligence, imagination, and creativity.[48] In this sense, it is not a mindless set of standards and procedures to follow, but is rather anongoing cycle, constantly developing more useful, accurate and comprehensive models and methods. For example, when Einstein developed the Special and General Theories of Relativity, he did not in any way refute or discount Newton's *Principia*. On the contrary, if the astronomically large, the vanishingly small, and the extremely fast are removed from Einstein's theories — all phenomena Newton could not have observed — Newton's equations are what remain. Einstein's theories are expansions and refinements of Newton's theories and, thus, increase our confidence in Newton's work.

A linearized, pragmatic scheme of the four points above is sometimes offered as a guideline for proceeding:[49]

1. Define a question
2. Gather information and resources (observe)
3. Form an explanatory hypothesis
4. Test the hypothesis by performing an experiment and collecting data in a reproducible manner
5. Analyze the data
6. Interpret the data and draw conclusions that serve as a starting point for new hypothesis
7. Publish results
8. Retest (frequently done by other scientists)

The iterative cycle inherent in this step-by-step method goes from point 3 to 6 back to 3 again.

While this schema outlines a typical hypothesis/testing method,[50] it should also be noted that a number of philosophers, historians and sociologists of science (perhaps most notably Paul Feyerabend) claim that such descriptions of scientific method have little relation to the ways science is actually practiced.

The "operational" paradigm combines the concepts of operational definition, instrumentalism, and utility:

The essential elements of scientific method are operations, observations, models, and a utility function for evaluating models.[51][*not in citation given*]

- Operation - Some action done to the system being investigated
- Observation - What happens when the operation is done to the system
- Model - A fact, hypothesis, theory, or the phenomenon itself at a certain moment
- Utility Function - A measure of the usefulness of the model to explain, predict, and control, and of the cost of use of it. One of the elements of any scientific utility function is the refutability of the model. Another is its simplicity, on the Principle of Parsimony more commonly known as Occam's Razor.

Characterizations

The scientific method depends upon increasingly sophisticated characterizations of the subjects of investigation. (The *subjects* can also be called *unsolved problems* or the *unknowns*.) For example, Benjamin Franklin conjectured, correctly, that St. Elmo's fire was electrical in nature, but it has taken a long series of experiments and theoretical changes to establish this. While seeking the pertinent properties of the subjects, careful thought may also entail some definitions and observations; the observations often demand careful measurements and/or counting.

The systematic, careful collection of measurements or counts of relevant quantities is often the critical difference between pseudo-sciences, such as alchemy, and science, such as chemistry or biology. Scientific measurements are usually tabulated, graphed, or mapped, and statistical manipulations, such as correlation and regression, performed on them. The measurements might be made in a controlled setting, such as a laboratory, or made on more or less inaccessible or unmanipulatable objects such as stars or human populations. The measurements often require specialized scientific instruments such as thermometers, spectroscopes, particle accelerators, or voltmeters, and the progress of a scientific field is usually intimately tied to their invention and improvement.

> "I am not accustomed to saying anything with certainty after only one or two observations."—Andreas Vesalius (1546)[52]

Uncertainty

Measurements in scientific work are also usually accompanied by estimates of their uncertainty. The uncertainty is often estimated by making repeated measurements of the desired quantity. Uncertainties may also be calculated by consideration of the uncertainties of the individual underlying quantities used. Counts of things, such as the number of people in a nation at a particular time, may also have an uncertainty due to data collection limitations. Or counts may represent a sample of desired quantities, with an uncertainty that depends upon the sampling method used and the number of samples taken.

Definition

Measurements demand the use of *operational definitions* of relevant quantities. That is, a scientific quantity is described or defined by how it is measured, as opposed to some more vague, inexact or "idealized" definition. For example, electrical current, measured in amperes, may be operationally defined in terms of the mass of silver deposited in a certain time on an electrode in an electrochemical device that is described in some detail. The operational definition of a thing often relies on comparisons with standards: the operational definition of "mass" ultimately relies on the use of an artifact, such as a particular kilogram of platinum-iridium kept in a laboratory in France.

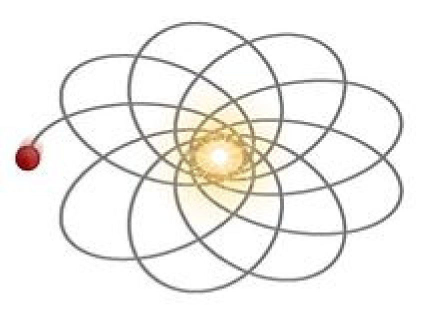
The scientific definition of a term sometimes differs substantially from its natural language usage. For example, mass and weight overlap in meaning in common discourse, but have distinct meanings in mechanics. Scientific quantities are often characterized by their units of measure which can later be described in terms of conventional physical units when communicating the work.

New theories are sometimes developed after realizing certain terms have not previously been sufficiently clearly defined. For example, Albert Einstein's first paper on relativity begins by definingsimultaneity and the means for determining length. These ideas were skipped over by Isaac Newton with, "*I do not define time, space, place and motion, as being well known to all.*" Einstein's paper then demonstrates that they (viz., absolute time and length independent of motion) were approximations. Francis Crick cautions us that when characterizing a subject, however, it can be premature to define something when it remains ill-understood.[53] In Crick's study of consciousness, he actually found it easier to study awareness in the visual system, rather than to study free will, for example. His cautionary example was the gene; the gene was much more poorly understood before Watson and Crick's pioneering discovery of the structure of DNA; it would have been counterproductive to spend much time on the definition of the gene, before them.

DNA-characterizations

The history of the discovery of the structure of DNA is a classic example of the elements of the scientific method: in 1950 it was known that genetic inheritance had a mathematical description, starting with the studies of Gregor Mendel, and that DNA contained genetic information (Oswald Avery's *transforming principle*).[54] But the mechanism of storing genetic information (i.e., genes) in DNA was unclear. Researchers in Bragg's laboratory at Cambridge University made X-ray diffraction pictures of various molecules, starting with crystals of salt, and proceeding to more complicated substances. Using clues painstakingly assembled over decades, beginning with its chemical composition, it was determined that it should be possible to characterize the physical structure of DNA, and the X-ray images would be the vehicle.[55] *..2. DNA-hypotheses*

Another example: precession of Mercury



Precession of the perihelion(exaggerated)

The characterization element can require extended and extensive study, even centuries. It took thousands of years of measurements, from theChaldean, Indian, Persian, Greek, Arabic and European astronomers, to fully record the motion of planet Earth. Newton was able to include those measurements into consequences of his laws of motion. But the perihelion of the planet Mercury's orbit exhibits a precession that cannot be fully explained by Newton's laws of motion (see diagram to the right), though it took quite some time to realize this. The observed difference for Mercury'sprecession between Newtonian theory and observation was one of the things that occurred to Einstein as a possible early test of his theory of General Relativity. His relativistic calculations matched observation much more closely than did Newtonian theory (the difference is approximately 43 arc-seconds per century), .

Hypothesis development

Main article: Hypothesis formation

An hypothesis is a suggested explanation of a phenomenon, or alternately a reasoned proposal suggesting a possible correlation between or among a set of phenomena.

Normally hypotheses have the form of a mathematical model. Sometimes, but not always, they can also be formulated as existential statements, stating that some particular instance of the phenomenon being studied has some characteristic and causal explanations, which have the general form of universal statements, stating that every instance of the phenomenon has a particular characteristic.

Scientists are free to use whatever resources they have — their own creativity, ideas from other fields, induction, Bayesian inference, and so on — to imagine possible explanations for a phenomenon under study. Charles Sanders Peirce, borrowing a page from Aristotle (*Prior Analytics*, 2.25) described the incipient stages of inquiry, instigated by the "irritation of doubt" to venture a plausible guess, as *abductive reasoning*. The history of science is filled with stories of scientists claiming a "flash of inspiration", or a hunch, which then motivated them to look for evidence to support or refute their idea. Michael Polanyi made such creativity the centerpiece of his discussion of methodology.

William Glen observes that

> the success of a hypothesis, or its service to science, lies not simply in its perceived "truth", or power to displace, subsume or reduce a predecessor idea, but perhaps more in its ability to stimulate the research that will illuminate … bald suppositions and areas of vagueness.[56]

In general scientists tend to look for theories that are "elegant" or "beautiful". In contrast to the usual English use of these terms, they here refer to a theory in accordance with the known facts, which is nevertheless relatively simple and easy to handle. Occam's Razor serves as a rule of thumb for choosing the most desirable amongst a group of equally explanatory hypotheses.

DNA-hypotheses

Linus Pauling proposed that DNA might be a triple helix.[57] This hypothesis was also considered by Francis Crick and James D. Watson but discarded. When Watson and Crick learned of Pauling's hypothesis, they understood from existing data that Pauling was wrong[58] and that Pauling would soon admit his difficulties with that structure. So, the race was on to figure out the correct structure (except that Pauling did not realize at the time that he was in a race—see section on "DNA-predictions" below)

Predictions from the hypothesis

Main article: Prediction in science

Any useful hypothesis will enable predictions, by reasoning including deductive reasoning. It might predict the outcome of an experiment in a laboratory setting or the observation of a phenomenon in nature. The prediction can also be statistical and deal only with probabilities.

It is essential that the outcome of testing such a prediction be currently unknown. Only in this case does a successful outcome increase the probability that the hypothesis is true. If the outcome is already known, it's called a consequence and should have already been considered while formulating the hypothesis.

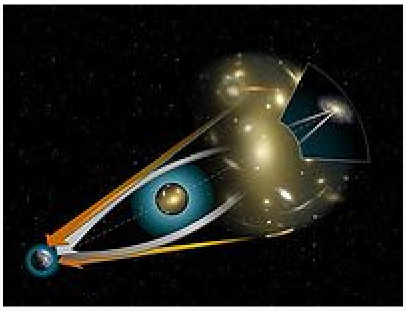
If the predictions are not accessible by observation or experience, the hypothesis is not yet testable and so will remain to that extent unscientific in a strict sense. A new technology or theory might make the necessary experiments feasible. Thus, much scientifically based speculation might convince one (or many) that the hypothesis that other intelligent species exist is true. But since there no experiment now known which can test this hypothesis, science itself can have little to say about the possibility. In future, some new technique might lead to an experimental test and the speculation would then become part of accepted science.

DNA-predictions

James D. Watson, Francis Crick, and others hypothesized that DNA had a helical structure. This implied that DNA's X-ray diffraction pattern would be 'x shaped'.[59][60] This prediction followed from the work of Cochran, Crick and Vand[20] (and independently by Stokes). The Cochran-Crick-Vand-Stokes theorem provided a mathematical explanation for the empirical observation that diffraction from helical structures produces x shaped patterns.

In their first paper, Watson and Crick also noted that the double helix structure they proposed provided a simple mechanism for DNA replication, writing "It has not escaped our notice that the specific pairing we have postulated immediately suggests a possible copying mechanism for the genetic material".[61] *..4. DNA-experiments*

Another example: general relativity



Einstein's prediction (1907): Light bends in a gravitational field

Einstein's theory of General Relativity makes several specific predictions about the observable structure of space-time, such as that light bends in agravitational field, and that the amount of bending depends in a precise way on the strength of that gravitational field. Arthur Eddington's observations made during a 1919 solar eclipse supported General Relativity rather than Newtonian gravitation.[62]

Experiments

Main article: Experiment

Once predictions are made, they can be sought by experiments. If test results contradict the predictions, the hypotheses which made them are called into question and become less tenable. Sometimes experiments are conducted incorrectly and are not very useful. If the results confirm the predictions, then the hypotheses are considered more likely to be correct, but might still be wrong and continue to be subject to further testing. The experimental control is a technique for dealing with observational error. This technique uses the contrast between multiple samples (or observations) under differing conditions to see what varies or what remains the same. We vary the conditions for each measurement, to help isolate what has changed. Mill's canons can then help us figure out what the important factor is.[63] Factor analysis is one technique for discovering the important factor in an effect.

Depending on the predictions, the experiments can have different shapes. It could be a classical experiment in a laboratory setting, a double-blind study or an archaeological excavation. Even taking a plane from New York to Paris is an experiment which tests the aerodynamical hypotheses used for constructing the plane.

Scientists assume an attitude of openness and accountability on the part of those conducting an experiment. Detailed record keeping is essential, to aid in recording and reporting on the experimental results, and supports the effectiveness and integrity of the procedure. They will also assist in reproducing the experimental results, likely by others. Traces of this approach can be seen in the work of Hipparchus (190-120 BCE), when determining a value for the precession of the Earth, while controlled experiments can be seen in the works of Jābir ibn Hayyān (721-815 CE),al-Battani (853–929) and Alhazen (965-1039).[64]

DNA-experiments

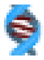
Watson and Crick showed an initial (and incorrect) proposal for the structure of DNA to a team from Kings College - Rosalind Franklin, Maurice Wilkins, and Raymond Gosling. Franklin immediately spotted the flaws which concerned the water content. Later Watson saw Franklin's detailed X-ray diffraction images which showed an X-shape and was able to confirm the structure was helical.[21][65] This rekindled Watson and Crick's model building and led to the correct structure. *..1. DNA-characterizations*

Evaluation and improvement

The scientific method is iterative. At any stage it is possible to refine its accuracy and precision, so that some consideration will lead the scientist to repeat an earlier part of the process. Failure to develop an interesting hypothesis may lead a scientist to re-define the subject under consideration. Failure of a hypothesis to produce interesting and testable predictions may lead to reconsideration of the hypothesis or of the definition of the subject. Failure of an experiment to produce interesting results may lead a scientist to reconsider the experimental method, the hypothesis, or the definition of the subject.

Other scientists may start their own research and enter the process at any stage. They might adopt the characterization and formulate their own hypothesis, or they might adopt the hypothesis and deduce their own predictions. Often the experiment is not done by the person who made the prediction, and the characterization is based on experiments done by someone else. Published results of experiments can also serve as a hypothesis predicting their own reproducibility.

DNA-iterations



After considerable fruitless experimentation, being discouraged by their superior from continuing, and numerous false starts,[66][67][68] Watson and Crick were able to infer the essential structure of DNA by concrete modeling of the physical shapes of the nucleotides which comprise it.[23][69] They were guided by the bond lengths which had been deduced by Linus Paulingand by Rosalind Franklin's X-ray diffraction images. *..DNA Example*

Confirmation

Science is a social enterprise, and scientific work tends to be accepted by the scientific community when it has been confirmed. Crucially, experimental and theoretical results must be reproduced by others within the scientific community. Researchers have given their lives for this vision; Georg Wilhelm Richmann was killed by ball lightning (1753) when attempting to replicate the 1752 kite-flying experiment of Benjamin Franklin.[70]

To protect against bad science and fraudulent data, government research-granting agencies such as the National Science Foundation, and science journals including *Nature* and *Science*, have a policy that researchers must archive their data and methods so other researchers can test the data and methods and build on the research that has gone before. Scientific data archiving can be done at a number of national archives in the U.S. or in the World Data Center.

Models of scientific inquiry

Main article: Models of scientific inquiry

Classical model

The classical model of scientific inquiry derives from Aristotle,[71] who distinguished the forms of approximate and exact reasoning, set out the threefold scheme of abductive, deductive, andinductive inference, and also treated the compound forms such as reasoning by analogy.

Pragmatic model

See also: Pragmatic theory of truth

In 1877,[72] Charles Sanders Peirce (/ˈpɜrs/ like "purse"; 1839–1914) characterized inquiry in general not as the pursuit of truth *per se* but as the struggle to move from irritating, inhibitory doubts born of surprises, disagreements, and the like, and to reach a secure belief, belief being that on which one is prepared to act. He framed scientific inquiry as part of a broader spectrum and as spurred, like inquiry generally, by actual doubt, not mere verbal or hyperbolic doubt, which he held to be fruitless.[73] He outlined four methods of settling opinion, ordered from least to most successful:

1. The method of tenacity (policy of sticking to initial belief) — which brings comforts and decisiveness but leads to trying to ignore contrary information and others' views as if truth were intrinsically private, not public. It goes against the social impulse and easily falters since one may well notice when another's opinion is as good as one's own initial opinion. Its successes can shine but tend to be transitory.
2. The method of authority — which overcomes disagreements but sometimes brutally. Its successes can be majestic and long-lived, but it cannot operate thoroughly enough to suppress doubts indefinitely, especially when people learn of other societies present and past.
3. The method of congruity or the *a priori* or the dilettante or "what is agreeable to reason" — which promotes conformity less brutally but depends on taste and fashion in paradigms and can go in circles over time, along with barren disputation. It is more intellectual and respectable but, like the first two methods, sustains accidental and capricious beliefs, destining some minds to doubts.
4. The scientific method — the method wherein inquiry regards itself as fallible and purposely tests itself and criticizes, corrects, and improves itself.

Peirce held that slow, stumbling ratiocination can be dangerously inferior to instinct and traditional sentiment in practical matters, and that the scientific method is best suited to theoretical research,[74] which in turn should not be trammeled by the other methods and practical ends; reason's "first rule" is that, in order to learn, one must desire to learn and, as a corollary, must not block the way of inquiry.[75] The scientific method excels the others by being deliberately designed to arrive — eventually — at the most secure beliefs, upon which the most successful practices can be based. Starting from the idea that people seek not truth *per se* but instead to subdue irritating, inhibitory doubt, Peirce showed how, through the struggle, some can come to submit to truth for the sake of belief's integrity, seek as truth the guidance of potential practice correctly to its given goal, and wed themselves to the scientific method.[72][76]

For Peirce, rational inquiry implies presuppositions about truth and the real; to reason is to presuppose (and at least to hope), as a principle of the reasoner's self-regulation, that the real is discoverable and independent of our vagaries of opinion. In that vein he defined truth as the correspondence of a sign (in particular, a proposition) to its object and, pragmatically, not as actual consensus of some definite, finite community (such that to inquire would be to poll the experts), but instead as that final opinion which all investigators *would* reach sooner or later but still inevitably, if they were to push investigation far enough, even when they start from different points.[77] In tandem he defined the real as a true sign's object (be that object a possibility or quality, or an actuality or brute fact, or a necessity or norm or law), which is what it is independently of any finite community's opinion and, pragmatically, depends only on the final opinion destined in a sufficient investigation. That is a destination as far, or near, as the truth itself to you or me or the given finite community. Thus his theory of inquiry boils down to "Do the science." Those conceptions of truth and the real involve the idea of a community both without definite limits (and thus potentially self-correcting as far as needed) and capable of definite increase of knowledge.[78]As inference, "logic is rooted in the social principle" since it depends on a standpoint that is, in a sense, unlimited.[79]

Paying special attention to the generation of explanations, Peirce outlined the scientific method as a coordination of three kinds of inference in a purposeful cycle aimed at settling doubts, as follows (in §III–IV in "A Neglected Argument"[80] except as otherwise noted):

1. **Abduction** (or retroduction). Guessing, inference to explanatory hypotheses for selection of those best worth trying. From abduction, Peirce distinguishes induction as inferring, on the basis of tests, the proportion of truth in the hypothesis. Every inquiry, whether into ideas, brute facts, or norms and laws, arises from surprising observations in one or more of those realms (and for example at any stage of an inquiry already underway). All explanatory content of theories comes from abduction, which guesses a new or outside idea so as to account in a simple, economical way for a surprising or complicative phenomenon. Oftenest, even a well-prepared mind guesses wrong. But the modicum of success of our guesses far exceeds that of sheer luck and seems born of attunement to nature by instincts developed or inherent, especially insofar as best guesses are optimally plausible and simple in the sense, said Peirce, of the "facile and natural", as byGalileo's natural light of reason and as distinct from "logical simplicity". Abduction is the most fertile but least secure mode of inference. Its general rationale is inductive: it succeeds often enough and, without it, there is no hope of sufficiently expediting inquiry (often multi-generational) toward new truths.[81] Coordinative method leads from abducing a plausible hypothesis to judging it for its testability[82] and for how its trial would economize inquiry itself.[83] Peirce calls his pragmatism "the logic of abduction".[84] His pragmatic maxim is: "Consider what effects that might conceivably have practical bearings you conceive the objects of your conception to have. Then, your conception of those effects is the whole of your conception of the object".[77] His pragmatism is a method of reducing conceptual confusions fruitfully by equating the meaning of any conception with the conceivable practical implications of its object's conceived effects — a method of experimentational mental reflection hospitable to forming hypotheses and conducive to testing them. It favors efficiency. The hypothesis, being insecure, needs to have practical implications leading at least to mental tests and, in science, lending themselves to scientific tests. A simple but unlikely guess, if uncostly to test for falsity, may belong first in line for testing. A guess is intrinsically worth testing if it has instinctive plausibility or reasoned objective probability, while subjective likelihood, though reasoned, can be misleadingly seductive. Guesses can be chosen for trial strategically, for their caution (for which Peirce gave as example the game of Twenty Questions), breadth, and incomplexity.[85] One can hope to discover only that which time would reveal through a learner's sufficient experience anyway, so the point is to expedite it; the economy of research is what demands the leap, so to speak, of abduction and governs its art.[83]

2. **Deduction**. Two stages:

i. Explication. Unclearly premissed, but deductive, analysis of the hypothesis in order to render its parts as clear as possible.

ii. Demonstration: Deductive Argumentation, Euclidean in procedure. Explicit deduction of hypothesis's consequences as predictions, for induction to test, about evidence to be found.Corollarial or, if needed, Theorematic.

3. **Induction**. The long-run validity of the rule of induction is deducible from the principle (presuppositional to reasoning in general[77]) that the real is only the object of the final opinion to which adequate investigation would lead;[86] anything to which no such process would ever lead would not be real. Induction involving ongoing tests or observations follows a method which, sufficiently persisted in, will diminish its error below any predesignate degree. Three stages:

i. Classification. Unclearly premissed, but inductive, classing of objects of experience under general ideas.

ii. Probation: direct Inductive Argumentation. Crude (the enumeration of instances) or Gradual (new estimate of proportion of truth in the hypothesis after each test). Gradual Induction is Qualitative or Quantitative; if Qualitative, then dependent on weightings of qualities or characters;[87] if Quantitative, then dependent on measurements, or on statistics, or on countings.

iii. Sentential Induction. "...which, by Inductive reasonings, appraises the different Probations singly, then their combinations, then makes self-appraisal of these very appraisals themselves, and passes final judgment on the whole result".

Computational approaches

Many subspecialties of applied logic and computer science, such as artificial intelligence, machine learning, computational learning theory, inferential statistics, and knowledge representation, are concerned with setting out computational, logical, and statistical frameworks for the various types of inference involved in scientific inquiry. In particular, they contribute hypothesis formation,logical deduction, and empirical testing. Some of these applications draw on measures of complexity from algorithmic information theory to guide the making of predictions from prior distributionsof experience, for example, see the complexity measure called the *speed prior* from which a computable strategy for optimal inductive reasoning can be derived.

Communication and community

Frequently the scientific method is employed not only by a single person, but also by several people cooperating directly or indirectly. Such cooperation can be regarded as one of the defining elements of a scientific community. Various techniques have been developed to ensure the integrity of scientific methodology within such an environment.

Peer review evaluation

Scientific journals use a process of *peer review*, in which scientists' manuscripts are submitted by editors of scientific journals to (usually one to three) fellow (usually anonymous) scientists familiar with the field for evaluation. The referees may or may not recommend publication, publication with suggested modifications, or, sometimes, publication in another journal. This serves to keep the scientific literature free of unscientific or pseudoscientific work, to help cut down on obvious errors, and generally otherwise to improve the quality of the material. The peer review process can have limitations when considering research outside the conventional scientific paradigm: problems of "groupthink" can interfere with open and fair deliberation of some new research.[88]

Documentation and replication

Main article: Reproducibility

Sometimes experimenters may make systematic errors during their experiments, unconsciously veer from scientific method (Pathological science) for various reasons, or, in rare cases, deliberately report false results. Consequently, it is a common practice for other scientists to attempt to repeat the experiments in order to duplicate the results, thus further validating the hypothesis.

Archiving

As a result, researchers are expected to practice scientific data archiving in compliance with the policies of government funding agencies and scientific journals. Detailed records of their experimental procedures, raw data, statistical analyses and source code are preserved in order to provide evidence of the effectiveness and integrity of the procedure and assist in reproduction. These procedural records may also assist in the conception of new experiments to test the hypothesis, and may prove useful to engineers who might examine the potential practical applications of a discovery.

Data sharing

When additional information is needed before a study can be reproduced, the author of the study is expected to provide it promptly. If the author refuses to share data, appeals can be made to the journal editors who published the study or to the institution which funded the research.

Limitations

Since it is impossible for a scientist to record *everything* that took place in an experiment, facts selected for their apparent relevance are reported. This may lead, unavoidably, to problems later if some supposedly irrelevant feature is questioned. For example, Heinrich Hertz did not report the size of the room used to test Maxwell's equations, which later turned out to account for a small deviation in the results. The problem is that parts of the theory itself need to be assumed in order to select and report the experimental conditions. The observations are hence sometimes described as being 'theory-laden'.

Dimensions of practice

Further information: Rhetoric of science

The primary constraints on contemporary science are:

- Publication, i.e. Peer review
- Resources (mostly funding)

It has not always been like this: in the old days of the "gentleman scientist" funding (and to a lesser extent publication) were far weaker constraints.

Both of these constraints indirectly require scientific method — work that violates the constraints will be difficult to publish and difficult to get funded. Journals require submitted papers to conform to "good scientific practice" and this is mostly enforced by peer review. Originality, importance and interest are more important - see for example the author guidelines for *Nature*.

Philosophy and sociology of science

Main articles: Philosophy of science and Sociology of science

Philosophy of science looks at the underpinning logic of the scientific method, at what separates science from non-science, and the ethic that is implicit in science. There are basic assumptions derived from philosophy that form the base of the scientific method - namely, that reality is objective and consistent, that humans have the capacity to perceive reality accurately, and that rational explanations exist for elements of the real world. These assumptions from methodological naturalism form the basis on which science is grounded. Logical Positivist, empiricist, falsificationist, and other theories have claimed to give a definitive account of the logic of science, but each has in turn been criticized.

Thomas Kuhn examined the history of science in his *The Structure of Scientific Revolutions*, and found that the actual method used by scientists differed dramatically from the then-espoused method. His observations of science practice are essentially sociological and do not speak to how science is or can be practiced in other times and other cultures.

Norwood Russell Hanson, Imre Lakatos and Thomas Kuhn have done extensive work on the "theory laden" character of observation. Hanson (1958) first coined the term for the idea that all observation is dependent on the conceptual framework of the observer, using the concept of gestalt to show how preconceptions can affect both observation and description.[89] He opens Chapter 1 with a discussion of the Golgi bodies and their initial rejection as an artefact of staining technique, and a discussion of Brahe and Kepler observing the dawn and seeing a "different" sun rise despite the same physiological phenomenon. Kuhn[90] and Feyerabend[91] acknowledge the pioneering significance of his work.

Kuhn (1961) said the scientist generally has a theory in mind before designing and undertaking experiments so as to make empirical observations, and that the "route from theory to measurement can almost never be traveled backward". This implies that the way in which theory is tested is dictated by the nature of the theory itself, which led Kuhn (1961, p. 166) to argue that "once it has been adopted by a profession ... no theory is recognized to be testable by any quantitative tests that it has not already passed".[92]

Paul Feyerabend similarly examined the history of science, and was led to deny that science is genuinely a methodological process. In his book *Against Method* he argues that scientific progress is *not* the result of applying any particular method. In essence, he says that for any specific method or norm of science, one can find a historic episode where violating it has contributed to the progress of science. Thus, if believers in scientific method wish to express a single universally valid rule, Feyerabend jokingly suggests, it should be 'anything goes'.[93] Criticisms such as his led to the strong programme, a radical approach to the sociology of science.

The postmodernist critiques of science have themselves been the subject of intense controversy. This ongoing debate, known as the science wars, is the result of conflicting values and assumptions between the postmodernist and realist camps. Whereas postmodernists assert that scientific knowledge is simply another discourse (note that this term has special meaning in this context) and not representative of any form of fundamental truth, realists in the scientific community maintain that scientific knowledge does reveal real and fundamental truths about reality. Many books have been written by scientists which take on this problem and challenge the assertions of the postmodernists while defending science as a legitimate method of deriving truth.[94]

Role of chance in discovery

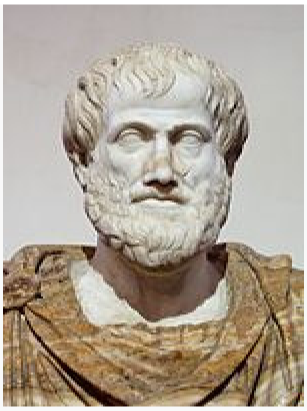
Main article: Luck in science

Somewhere between 33% and 50% of all scientific discoveries are estimated to have been *stumbled upon*, rather than sought out. This may explain why scientists so often express that they were lucky.[95] Louis Pasteur is credited with the famous saying that "Luck favours the prepared mind", but some psychologists have begun to study what it means to be 'prepared for luck' in the scientific context. Research is showing that scientists are taught various heuristics that tend to harness chance and the unexpected.[95][96] This is what professor of economics Nassim Nicholas Taleb calls "Anti-fragility"; while some systems of investigation are fragile in the face of human error, human bias, and randomness, the scientific method is more than resistant or tough - it actually benefits from such randomness in many ways (it is anti-fragile). Taleb believes that the more anti-fragile the system, the more it will flourish in the real world.[97]

Psychologist Kevin Dunbar says the process of discovery often starts with researchers finding bugs in their experiments. These unexpected results lead researchers to try and fix what they *think*is an error in their method. Eventually, the researcher decides the error is too persistent and systematic to be a coincidence. The highly controlled, cautious and curious aspects of the scientific method are thus what make it well suited for identifying such persistent systematic errors. At this point, the researcher will begin to think of theoretical explanations for the error, often seeking the help of colleagues across different domains of expertise.[95][96]

History

Main article: History of scientific method
See also: Timeline of the history of scientific method



Aristotle, 384 BC–322 BC. "As regards his method, Aristotle is recognized as the inventor of scientific method because of his refined analysis of logical implications contained in demonstrative discourse, which goes well beyond natural logic and does not owe anything to the ones who philosophized before him."—Riccardo Pozzo[98]

The development of the scientific method is inseparable from the history of science itself. Ancient Egyptian documents describe empirical methods in astronomy,[99]mathematics,[100] and medicine.[101] The ancient Greek philosopher Thales in the 6th century BC refused to accept supernatural, religious or mythological explanations for natural phenomena, proclaiming that every event had a natural cause. The development of deductive reasoning by Plato was an important step towards the scientific method. Empiricism seems to have been formalized by Aristotle, who believed that universal truths could be reached via induction.

There are hints of experimental methods from the Classical world (e.g., those reported by Archimedes in a report recovered early in the 20th century from anoverwritten manuscript), but the first clear instances of an experimental scientific method seem to have been developed by Islamic scientists who introduced the use of experimentation and quantification within a generally empirical orientation. For example, Alhazen performed optical and physiological experiments, reported in his manifold works, the most famous being *Book of Optics* (1021).[102][*unreliable source?*]

By the late 15th century, the physician-scholar Niccolò Leoniceno was finding errors in Pliny's *Natural History*. As a physician, Leoniceno was concerned about these botanical errors propagating to the materia medica on which medicines were based.[103] To counter this, a botanical garden was established at Orto botanico di Padova, University of Padua (in use for teaching by 1546), in order that medical students might have empirical access to the plants of a pharmacopia. The philosopher and physician Francisco Sanches was led by his medical training at Rome, 1571–73, and by the philosophical skepticism recently placed in the European mainstream by the publication of Sextus Empiricus' "Outlines of Pyrrhonism", to search for a true method of knowing (*modus sciendi*), as nothing clear can be known by the methods of Aristotle and his followers[104] — for example, syllogism fails upon circular reasoning. Following the physician Galen's *method of medicine*, Sanches lists the methods of judgement and experience, which are faulty in the wrong hands,[105] and we are left with the bleak statement *That Nothing is Known* (1581). This challenge was taken up by René Descartes in the next generation (1637), but at the least, Sanches warns us that we ought to refrain from the methods, summaries, and commentaries on Aristotle, if we seek scientific knowledge. In this, he is echoed by Francis Bacon, also influenced by skepticism; Sanches cites the humanist Juan Luis Vives who sought a better educational system, as well as a statement of human rights as a pathway for improvement of the lot of the poor.

The modern scientific method crystallized no later than in the 17th and 18th centuries. In his work *Novum Organum* (1620) — a reference to Aristotle's *Organon* —Francis Bacon outlined a new system of logic to improve upon the old philosophical process of syllogism.[106] Then, in 1637, René Descartes established the framework for scientific method's guiding principles in his treatise, *Discourse on Method*. The writings of Alhazen, Bacon and Descartes are considered critical in the historical development of the modern scientific method, as are those of John Stuart Mill.[107]

> Grosseteste was "the principal figure" in bringing about "a more adequate method of scientific inquiry" by which "medieval scientists were able eventually to outstrip their ancient European and Muslim teachers" (Dales 1973:62). ... His thinking influenced Roger Bacon, who spread Grosseteste's ideas from Oxford to the University of Paris during a visit there in the 1240s. From the prestigious universities in Oxford and Paris, the new experimental science spread rapidly throughout the medieval universities: "And so it went to Galileo, William Gilbert, Francis Bacon, William Harvey, Descartes, Robert Hooke, Newton, Leibniz, and the world of the seventeenth century" (Crombie 1962:15). So it went to us also.
>
> — Hugh G. Gauch, 2003.[108]

Roger Bacon (c.1214–1294) is sometimes credited as one of the earliest European advocates of the modern scientific method inspired by the works of Aristotle.[109]

In the late 19th century, Charles Sanders Peirce proposed a schema that would turn out to have considerable influence in the development of current scientific methodology generally. Peirce accelerated the progress on several fronts. Firstly, speaking in broader context in "How to Make Our Ideas Clear" (1878), Peirce outlined an objectively verifiable method to test the truth of putative knowledge on a way that goes beyond mere foundational alternatives, focusing upon both*deduction* and *induction*. He thus placed induction and deduction in a complementary rather than competitive context (the latter of which had been the primary trend at least since David Hume, who wrote in the mid-to-late 18th century). Secondly, and of more direct importance to modern method, Peirce put forth the basic schema for hypothesis/testing that continues to prevail today. Extracting the theory of inquiry from its raw materials in classical logic, he refined it in parallel with the early development of symbolic logic to address the then-current problems in scientific reasoning. Peirce examined and articulated the three fundamental modes of reasoning that, as discussed above in this article, play a role in inquiry today, the processes that are currently known as abductive, deductive, andinductive inference. Thirdly, he played a major role in the progress of symbolic logic itself — indeed this was his primary specialty.

Beginning in the 1930s, Karl Popper argued that there is no such thing as inductive reasoning.[110] All inferences ever made, including in science, are purely[111]deductive according to this view. Accordingly, he claimed that the empirical character of science has nothing to do with induction—but with the deductive property of falsifiability that scientific hypotheses have. Contrasting his views with inductivism and positivism, he even denied the existence of the scientific method: "(1) There is no method of discovering a scientific theory (2) There is no method for ascertaining the truth of a scientific hypothesis, i.e., no method of verification; (3) There is no method for ascertaining whether a hypothesis is 'probable', or probably true".[112] Instead, he held that there is only one universal method, a method not particular to science: The negative method of criticism, or colloquially termed trial and error. It covers not only all products of the human mind, including science, mathematics, philosophy, art and so on, but also the evolution of life. Following Peirce and others, Popper argued that science is fallible and has no authority.[112] In contrast to empiricist-inductivist views, he welcomed metaphysics and philosophical discussion and even gave qualified support to myths[113] and pseudosciences.[114] Popper's view has become known as critical rationalism.

Relationship with mathematics

Science is the process of gathering, comparing, and evaluating proposed models against observables. A model can be a simulation, mathematical or chemical formula, or set of proposed steps. Science is like mathematics in that researchers in both disciplines can clearly distinguish what is *known* from what is *unknown* at each stage of discovery. Models, in both science and mathematics, need to be internally consistent and also ought to be *falsifiable* (capable of disproof). In mathematics, a statement need not yet be proven; at such a stage, that statement would be called a conjecture. But when a statement has attained mathematical proof, that statement gains a kind of immortality which is highly prized by mathematicians, and for which some mathematicians devote their lives.[115]

Mathematical work and scientific work can inspire each other.[116] For example, the technical concept of time arose in science, and timelessness was a hallmark of a mathematical topic. But today, the Poincaré conjecture has been proven using time as a mathematical concept in which objects can flow (see Ricci flow).

Nevertheless, the connection between mathematics and reality (and so science to the extent it describes reality) remains obscure. Eugene Wigner's paper, *The Unreasonable Effectiveness of Mathematics in the Natural Sciences*, is a very well known account of the issue from a Nobel Prize physicist. In fact, some observers (including some well known mathematicians such as Gregory Chaitin, and others such as Lakoff and Núñez) have suggested that mathematics is the result of practitioner bias and human limitation (including cultural ones), somewhat like the post-modernist view of science.

George Pólya's work on problem solving,[117] the construction of mathematical proofs, and heuristic[118][119] show that the mathematical method and the scientific method differ in detail, while nevertheless resembling each other in using iterative or recursive steps.

	Mathematical method	**Scientific method**
1	Understanding	Characterization from experience and observation
2	Analysis	Hypothesis: a proposed explanation
3	Synthesis	Deduction: prediction from the hypothesis
4	Review/Extend	Test and experiment

In Pólya's view, *understanding* involves restating unfamiliar definitions in your own words, resorting to geometrical figures, and questioning what we know and do not know already; *analysis*, which Pólya takes from Pappus,[120] involves free and heuristic construction of plausible arguments, working backward from the goal, and devising a plan for constructing the proof; *synthesis* is the strictEuclidean exposition of step-by-step details[121] of the proof; *review* involves reconsidering and re-examining the result and the path taken to it.

Gauss, when asked how he came about his theorems, once replied "durch planmässiges Tattonieren" (through systematic palpable experimentation).[122]

Imre Lakatos argued that mathematicians actually use contradiction, criticism and revision as principles for improving their work.[123]

See also

- Confirmability
- Contingency
- Empirical limits in science
- Falsifiability
- Hypothesis
- Hypothesis testing
- Inquiry
- Information theory
- Logic
    - Abductive reasoning
    - Deductive reasoning
    - Inductive reasoning
    - Inference
    - Tautology
- Methodology
    - Baconian method
    - Empirical method
    - Historical method
    - Philosophical method
    - Phronetic method
    - Scholarly method
    - Strong inference
- Mathematics
- OGHET
- Operationali
- Quantitative
- Reproducibi
- Research
- Social resea
- Statistics
- Testability
- Theory
- Verification a

Problems and issues

- Induction
- Problem of induction
- Occam's razor
- Skeptical hypotheses
- Poverty of the stimulus
- Reference class problem
- Underdetermination
- Demarcation problem
- Holistic science
- Junk science
- Pseudoscience
- Scientific misc

History, philosophy, sociology

- Epistemology
- Epistemic truth
- History of science
- History of scientific method
- Instrumentalism
- Mertonian norms (Cudos)
- Philosophy of science
- Science studies
- Sociology of scientific know
- Timeline of scientific metho

Notes

1. ^ a b Goldhaber & Nieto 2010, p. 940
2. ^ "[4] Rules for the study of natural philosophy", Newton 1999, pp. 794–6, from Book **3**, *The System of the World.*
3. ^ Oxford English Dictionary - entry for *scientific*.
4. ^ a b c "How does light travel through transparent bodies? Light travels through transparent bodies in straight lines only.... We have explained this exhaustively in our *Book of Optics*. But let us now mention something to prove this convincingly: the fact that light travels in straight lines is clearly observed in the lights which enter into dark rooms through holes.... [T]he entering light will be clearly observable in the dust which fills the air. —Alhazen, translated into English from German by M. Schwarz, from "Abhandlung über das Licht", J. Baarmann (ed. 1882) *Zeitschrift der Deutschen Morgenländischen Gesellschaft* Vol **36** as quoted in Sambursky 1974, p. 136.
    - He demonstrated his conjecture that "light travels through transparent bodies in straight lines only" by placing a straight stick or a taut thread next to the light beam, as quoted inSambursky 1974, p. 136 to prove that light travels in a straight line.
    - David Hockney, (2001, 2006) in *Secret Knowledge: rediscovering the lost techniques of the old masters* ISBN 0-14-200512-6 (expanded edition) cites Alhazen several times as the likely source for the portraiture technique using the camera obscura, which Hockney rediscovered with the aid of an optical suggestion from Charles M. Falco. *Kitab al-Manazir*, which is Alhazen's *Book of Optics*, at that time denoted *Opticae Thesaurus, Alhazen Arabis*, was translated from Arabic into Latin for European use as early as 1270.

Hockney cites Friedrich Risner's 1572 Basle edition of *Opticae Thesaurus*. Hockney quotes Alhazen as the first clear description of the camera obscura in Hockney, p. 240.

"Truth is sought for its own sake. And those who are engaged upon the quest for anything for its own sake are not interested in other things. Finding the truth is difficult, and the road to it is rough."—Alhazen (Ibn Al-Haytham 965-c.1040) *Critique of Ptolemy*, translated by S. Pines,*Actes X Congrès internationale d'histoire des sciences*, Vol **I** Ithaca 1962, as quoted inSambursky 1974, p. 139. (This quotation is from Alhazen's critique of Ptolemy's books*Almagest*, *Planetary Hypotheses*, and *Optics* as translated into English by A. Mark Smith.)

5. ^ Morris Kline (1985) *Mathematics for the nonmathematician*. Courier Dover Publications. p. 284. ISBN 0-486-24823-2
6. ^ Shapere, Dudley (1974). *Galileo: A Philosophical Study*. University of Chicago Press. ISBN 0-226-75007-8.
7. ^ Peirce, C. S., *Collected Papers* v. 1, paragraph 74.
8. ^ Karl R. Popper (1963), 'The Logic of Scientific Discovery'. The Logic of Scientific Discoverypp. 17-20, 249-252, 437-438, and elsewhere.
    - Leon Lederman, for teaching physics first, illustrates how to avoid confirmation bias: Ian Shelton, in Chile, was initially skeptical that supernova 1987a was real, but possibly an artifact of instrumentation (null hypothesis), so he went outside and disproved his null hypothesis by observing SN 1987a with the naked eye. The Kamiokande experiment, in Japan, independently observed neutrinos from SN 1987a at the same time.
9. ^ Gauch 2003, pp. 3
10. ^ *History of Inductive Science* (1837), and in *Philosophy of Inductive Science* (1840)
11. ^ Schuster and Powers (2005), Translational and Experimental Clinical Research, Ch. 1.Link. This chapter also discusses the different types of research questions and how they are produced.
12. ^ This phrasing is attributed to Marshall Nirenberg.
13. ^ Karl R. Popper, *Conjectures and Refutations: The Growth of Scientific Knowledge*, Routledge, 2003 ISBN 0-415-28594-1
14. ^ Galilei, Galileo (M.D.C.XXXVIII), *Discorsi e Dimonstrazioni Matematiche, intorno a due nuoue scienze*, Leida: Apresso gli Elsevirri, ISBN 0-486-60099-8, Dover reprint of the 1914 Macmillan translation by Henry Crew and Alfonso de Salvio of *Two New Sciences*, Galileo Galilei Linceo(1638). Additional publication information is from the collection of first editions of the Library of Congress surveyed by Bruno 1989, pp. 261–264.
15. ^ Godfrey-Smith 2003 p. 236.
16. ^ McCarty1985
17. ^ October 1951, as noted in McElheny 2004, p. 40:"That's what a helix should look like!" Crick exclaimed in delight (This is the Cochran-Crick-Vand-Stokes theory of the transform of a helix).
18. ^ June 1952, as noted in McElheny 2004, p. 43: Watson had succeeded in getting X-ray pictures of TMV showing a diffraction pattern consistent with the transform of a helix.
19. ^ Watson did enough work on Tobacco mosaic virus to produce the diffraction pattern for a helix, per Crick's work on the transform of a helix. pp. 137-138, Horace Freeland Judson (1979)*The Eighth Day of Creation* ISBN 0-671-22540-5
20. ^ *a* *b* — Cochran W, Crick FHC and Vand V. (1952) "The Structure of Synthetic Polypeptides. I. The Transform of Atoms on a Helix", *Acta Cryst.*, **5**, 581-586.

21. ^ [a] [b] Friday, January 30, 1953. Tea time, as noted in McElheny 2004, p. 52: Franklin confronts Watson and his paper - "Of course it [Pauling's pre-print] is wrong. DNA is not a helix." However, Watson then visits Wilkins' office, sees photo 51, and immediately recognizes the diffraction pattern of a helical structure. But additional questions remained, requiring additional iterations of their research. For example, the number of strands in the backbone of the helix (Crick suspected 2 strands, but cautioned Watson to examine that more critically), the location of the base pairs (inside the backbone or outside the backbone), etc. One key point was that they realized that the quickest way to reach a result was not to continue a mathematical analysis, but to build a physical model.
22. ^ "The instant I saw the picture my mouth fell open and my pulse began to race." —Watson 1968, p. 167 Page 168 shows the X-shaped pattern of the B-form of DNA, clearly indicating crucial details of its helical structure to Watson and Crick.
    - McElheny 2004 p.52 dates the Franklin-Watson confrontation as Friday, January 30, 1953. Later that evening, Watson urges Wilkins to begin model-building immediately. But Wilkins agrees to do so only after Franklin's departure.
23. ^ [a] [b] Saturday, February 28, 1953, as noted in McElheny 2004, pp. 57–59: Watson found the base pairing mechanism which explained Chargaff's rules using his cardboard models.
24. ^ Fleck 1979, pp. xxvii-xxviii
25. ^ "NIH Data Sharing Policy."
26. ^ Stanovich, Keith E. (2007). *How to Think Straight About Psychology*. Boston: Pearson Education. pg 123
27. ^ [a] [b] Brody 1993, pp. 44–45
28. ^ Hall, B. K.; Hallgrímsson, B., eds. (2008). *Strickberger's Evolution* (4th ed.). Jones & Bartlett. p. 762. ISBN 0-7637-0066-5.
29. ^ Cracraft, J.; Donoghue, M. J., eds. (2005). *Assembling the tree of life*. Oxford University Press. p. 592. ISBN 0-19-517234-5.
30. ^ Needham & Wang 1954 p.166 shows how the 'flying gallop' image propagated from China to the West.
31. ^ "A myth is a belief given uncritical acceptance by members of a group ..." —Weiss, *Business Ethics* p. 15, as cited by Ronald R. Sims (2003) *Ethics and corporate social responsibility: why giants fall* p.21
32. ^ Imre Lakatos (1976), *Proofs and Refutations*. Taleb 2007, p. 72 lists ways to avoid narrative fallacy and confirmation bias.
33. ^ For more on the narrative fallacy, see also Fleck 1979, p. 27: "Words and ideas are originally phonetic and mental equivalences of the experiences coinciding with them. ... Such proto-ideas are at first always too broad and insufficiently specialized. ... Once a structurally complete and closed system of opinions consisting of many details and relations has been formed, it offers enduring resistance to anything that contradicts it."
34. ^ See the hypothethico-deductive method, for example, Godfrey-Smith 2003, p. 236.
35. ^ Jevons 1874, pp. 265–6.
36. ^ pp.65,73,92,398 —Andrew J. Galambos, *Sic Itur ad Astra* ISBN 0-88078-004-5(AJG learned scientific method from Felix Ehrenhaft
37. ^ Galileo 1638, pp. v-xii,1–300
38. ^ Brody 1993, pp. 10–24 calls this the "epistemic cycle": "The epistemic cycle starts from an initial model; iterations of the cycle then improve the model until an adequate fit is achieved."
39. ^ Iteration example: Chaldean astronomers such as Kidinnu compiled astronomical data.Hipparchus was to use this data to calculate the precession of the Earth's axis. Fifteen hundred years after Kidinnu, Al-Batani, born in what is now Turkey, would use the collected data and improve Hipparchus' value for the precession of the Earth's axis. Al-Batani's value, 54.5 arc-seconds per year, compares well to the current value of 49.8 arc-seconds per year (26,000 years for Earth's axis to round the circle of nutation).

40. ^ Recursion example: the Earth is itself a magnet, with its own North and South Poles William Gilbert (in Latin 1600) *De Magnete*, or *On Magnetism and Magnetic Bodies.* Translated from Latin to English, selection by Moulton & Schifferes 1960, pp. 113–117. Gilbert created a *terrella*, a lodestone ground into a spherical shape, which served as Gilbert's model for the Earth itself, as noted in Bruno 1989, p. 277.
41. ^ "The foundation of general physics ... is experience. These ... everyday experiences we do not discover without deliberately directing our attention to them. Collecting information about these is *observation*." —Hans Christian Ørsted("First Introduction to General Physics" ¶13, part of a series of public lectures at the University of Copenhagen. Copenhagen 1811, in Danish, printed by Johan Frederik Schulz. In Kirstine Meyer's 1920 edition of Ørsted's works, vol.**III** pp. 151-190.) "First Introduction to Physics: the Spirit, Meaning, and Goal of Natural Science". Reprinted in German in 1822, Schweigger's *Journal für Chemie und Physik* **36**, pp.458-488, as translated in Ørsted 1997, p. 292
42. ^ "When it is not clear under which law of nature an effect or class of effect belongs, we try to fill this gap by means of a guess. Such guesses have been given the name *conjectures* or*hypotheses*." —Hans Christian Ørsted(1811) "First Introduction to General Physics" as translated in Ørsted 1997, p. 297.
43. ^ "In general we look for a new law by the following process. First we guess it. ...", —Feynman 1965, p. 156
44. ^ "... the statement of a law - A depends on B - always transcends experience."—Born 1949, p. 6
45. ^ "The student of nature ... regards as his property the experiences which the mathematician can only borrow. This is why he deduces theorems directly from the nature of an effect while the mathematician only arrives at them circuitously." —Hans Christian Ørsted(1811) "First Introduction to General Physics" ¶17. as translated in Ørsted 1997, p. 297.
46. ^ Salviati speaks: "I greatly doubt that Aristotle ever tested by experiment whether it be true that two stones, one weighing ten times as much as the other, if allowed to fall, at the same instant, from a height of, say, 100 cubits, would so differ in speed that when the heavier had reached the ground, the other would not have fallen more than 10 cubits." Two New Sciences (1638)—Galileo 1638, pp. 61–62. A more extended quotation is referenced by Moulton & Schifferes 1960, pp. 80–81.
47. ^ In the inquiry-based education paradigm, the stage of "characterization, observation, definition, …" is more briefly summed up under the rubric of a Question
48. ^ "To raise new questions, new possibilities, to regard old problems from a new angle, requires creative imagination and marks real advance in science." —Einstein & Infeld 1938, p. 92.
49. ^ Crawford S, Stucki L (1990), "Peer review and the changing research record", "J Am Soc Info Science", vol. 41, pp 223-228
50. ^ *See, e.g.*, Gauch 2003, esp. chapters 5-8
51. ^ Cartwright, Nancy (1983), *How the Laws of Physics Lie.* Oxford: Oxford University Press. ISBN 0-19-824704-4
52. ^ Andreas Vesalius, *Epistola, Rationem, Modumque Propinandi Radicis Chynae Decocti*(1546), 141. Quoted and translated in C.D. O'Malley, *Andreas Vesalius of Brussels*, (1964), 116. As quoted by Bynum & Porter 2005, p. 597: Andreas Vesalius,597#1.
53. ^ Crick, Francis (1994), *The Astonishing Hypothesis* ISBN 0-684-19431-7 p.20
54. ^ McCarty1985
55. ^ McElheny 2004 p.34
56. ^ Glen 1994, pp. 37–38.
57. ^ "The structure that we propose is a three-chain structure, each chain being a helix" — Linus Pauling, as quoted on p. 157 by Horace Freeland Judson (1979), *The Eighth Day of Creation*ISBN 0-671-22540-5
58. ^ McElheny 2004, pp. 49–50: January 28, 1953 - Watson read Pauling's pre-print, and realized that in Pauling's model, DNA's phosphate groups had to be un-ionized. But DNA is an acid, which contradicts Pauling's model.

59. ^ June 1952. as noted in McElheny 2004, p. 43: Watson had succeeded in getting X-ray pictures of TMV showing a diffraction pattern consistent with the transform of a helix.

60. ^ Watson did enough work on Tobacco mosaic virus to produce the diffraction pattern for a helix, per Crick's work on the transform of a helix. pp. 137-138, Horace Freeland Judson (1979)*The Eighth Day of Creation* ISBN 0-671-22540-5

61. ^ McElheny 2004 p.68: *Nature* April 25, 1953.

62. ^ In March 1917, the Royal Astronomical Society announced that on May 29, 1919, the occasion of a total eclipse of the sun would afford favorable conditions for testing Einstein's General theory of relativity. One expedition, to Sobral, Ceará, Brazil, and Eddington's expedition to the island of Principe yielded a set of photographs, which, when compared to photographs taken atSobral and at Greenwich Observatory showed that the deviation of light was measured to be 1.69 arc-seconds, as compared to Einstein's desk prediction of 1.75 arc-seconds. — Antonina Vallentin (1954), *Einstein*, as quoted by Samuel Rapport and Helen Wright (1965), *Physics*, New York: Washington Square Press, pp 294-295.

63. ^ Mill, John Stuart, "A System of Logic", University Press of the Pacific, Honolulu, 2002, ISBN 1-4102-0252-6.

64. ^ al-Battani, *De Motu Stellarum* translation from Arabic to Latin in 1116, as cited by "Battani, al-" (c.858-929) *Encyclopaedia Britannica*, 15th. ed. Al-Battani is known for his accurate observations at al-Raqqah in Syria, beginning in 877. His work includes measurement of the annual precession of the equinoxes.

65. ^ "The instant I saw the picture my mouth fell open and my pulse began to race." —Watson 1968, p. 167 Page 168 shows the X-shaped pattern of the B-form of DNA, clearly indicating

1. crucial details of its helical structure to Watson and Crick.
   - McElheny 2004 p.52 dates the Franklin-Watson confrontation as Friday, January 30, 1953. Later that evening, Watson urges Wilkins to begin model-building immediately. But Wilkins agrees to do so only after Franklin's departure.
2. ^ McElheny 2004 p.53: The weekend (January 31-February 1) after seeing photo 51, Watson informed Bragg of the X-ray diffraction image of DNA in B form. Bragg gave them permission to restart their research on DNA (that is, model building).
3. ^ McElheny 2004 p.54: On Sunday February 8, 1953, Maurice Wilkes gave Watson and Crick permission to work on models, as Wilkes would not be building models until Franklin left DNA research.
4. ^ McElheny 2004 p.56: Jerry Donohue, on sabbatical from Pauling's lab and visiting Cambridge, advises Watson that textbook form of the base pairs was incorrect for DNA base pairs; rather, the keto form of the base pairs should be used instead. This form allowed the bases' hydrogen bonds to pair 'unlike' with 'unlike', rather than to pair 'like' with 'like', as Watson was inclined to model, on the basis of the textbook statements. On February 27, 1953, Watson was convinced enough to make cardboard models of the nucleotides in their keto form.
5. ^ "Suddenly I became aware that an adenine-thymine pair held together by two hydrogen bondswas identical in shape to a guanine-cytosine pair held together by at least two hydrogen bonds. ..." —Watson 1968, pp. 194–197.
   - McElheny 2004 p.57 Saturday, February 28, 1953, Watson tried 'like with like' and admited these base pairs didn't have hydrogen bonds that line up. But after trying 'unlike with unlike', and getting Jerry Donohue's approval, the base pairs turned out to be identical in shape (as Watson stated above in his 1968 *Double Helix* memoir quoted above). Watson now felt confident enough to inform Crick. (Of course, 'unlike with unlike' increases the number of possible codons, if this scheme were a genetic code.)
6. ^ See, e.g., *Physics Today*, **59**(1), p42. Richmann electrocuted in St. Petersburg (1753)

7. ^ Aristotle, "Prior Analytics", Hugh Tredennick (trans.), pp. 181-531 in *Aristotle, Volume 1*, Loeb Classical Library, William Heinemann, London, UK, 1938.
8. ^ *a* *b* Peirce (1877), "The Fixation of Belief", *Popular Science Monthly*, v. 12, pp. 1–15. Reprinted often, including (*Collected Papers of Charles Sanders Peirce* v. 5, paragraphs 358–87), (*The Essential Peirce*, v. 1, pp. 109–23). *Peirce.org* Eprint. *Wikisource* Eprint.
9. ^ "What one does not in the least doubt one should not pretend to doubt; but a man should train himself to doubt," said Peirce in a brief intellectual autobiography; see Ketner, Kenneth Laine (2009) "Charles Sanders Peirce: Interdisciplinary Scientist" in *The Logic of Interdisciplinarity*). Peirce held that actual, genuine doubt originates externally, usually in surprise, but also that it is to be sought and cultivated, "provided only that it be the weighty and noble metal itself, and no counterfeit nor paper substitute"; in "Issues of Pragmaticism", *The Monist*, v. XV, n. 4, pp. 481-99, see p. 484, and p. 491. (Reprinted in *Collected Papers* v. 5, paragraphs 438-63, see 443 and 451).
10. ^ Peirce (1898), "Philosophy and the Conduct of Life", Lecture 1 of the Cambridge (MA) Conferences Lectures, published in *Collected Papers* v. 1, paragraphs 616-48 in part and in*Reasoning and the Logic of Things*, Ketner (ed., intro.) and Putnam (intro., comm.), pp. 105-22, reprinted in *Essential Peirce* v. 2, pp. 27-41.
11. ^ Peirce (1899), "F.R.L." [First Rule of Logic], *Collected Papers* v. 1, paragraphs 135-40, Eprint
12. ^ *Collected Papers* v. 5, in paragraph 582, from 1898:

    > ... [rational] inquiry of every type, fully carried out, has the vital power of self-correction and of growth. This is a property so deeply saturating its inmost nature that it may truly be said that there is but one thing needful for learning the truth, and that is a hearty and active desire to learn what is true.

13. ^ *a* *b* *c* Peirce (1877), "How to Make Our Ideas Clear", *Popular Science Monthly*, v. 12, pp. 286–302. Reprinted often, including *Collected Papers* v. 5, paragraphs 388–410, *Essential Peirce* v. 1, pp. 124–41. *Arisbe*Eprint. *Wikisource* Eprint.
14. ^ Peirce (1868), "Some Consequences of Four Incapacities", *Journal of Speculative Philosophy* v. 2, n. 3, pp. 140–57. Reprinted *Collected Papers* v. 5, paragraphs 264–317, *The Essential Peirce* v. 1, pp. 28–55, and elsewhere. *Arisbe* Eprint
15. ^ Peirce (1878), "The Doctrine of Chances", *Popular Science Monthly* v. 12, pp. 604-15, see pp.610-11 via *Internet Archive*. Reprinted *Collected Papers* v. 2, paragraphs 645-68, *Essential Peirce* v. 1, pp. 142-54. "...death makes the number of our risks, the number of our inferences, finite, and so makes their mean result uncertain. The very idea of probability and of reasoning rests on the assumption that this number is indefinitely great. ....logicality inexorably requires that our interests shall not be limited. .... Logic is rooted in the social principle."
16. ^ Peirce (1908), "A Neglected Argument for the Reality of God", *Hibbert Journal* v. 7, pp. 90-112.s:A Neglected Argument for the Reality of God with added notes. Reprinted with previously unpublished part, *Collected Papers* v. 6, paragraphs 452-85, *The Essential Peirce* v. 2, pp. 434-50, and elsewhere.
17. ^ Peirce (c. 1906), "PAP (Prolegomena for an Apology to Pragmatism)" (Manuscript 293, not the like-named article), *The New Elements of Mathematics* (NEM) 4:319-320, see first quote under "Abduction" at *Commens Dictionary of Peirce's Terms*.
18. ^ Peirce, Carnegie application (L75, 1902), *New Elements of Mathematics* v. 4, pp. 37-38:

    > For it is not sufficient that a hypothesis should be a justifiable one. Any hypothesis which explains the facts is justified critically. But among justifiable hypotheses we have to select that one which is suitable for being tested by experiment.

19. ^ *a* *b* Peirce (1902), Carnegie application, see MS L75.329-330, from Draft D of Memoir 27:

> Consequently, to discover is simply to expedite an event that would occur sooner or later, if we had not troubled ourselves to make the discovery. Consequently, the art of discovery is purely a question of economics. The economics of research is, so far as logic is concerned, the leading doctrine with reference to the art of discovery. Consequently, the conduct of abduction, which is chiefly a question of heuretic and is the first question of heuretic, is to be governed by economical considerations.

20. ^ Peirce (1903), "Pragmatism — The Logic of Abduction", *Collected Papers* v. 5, paragraphs 195-205, especially 196. Eprint.
21. ^ Peirce, "On the Logic of Drawing Ancient History from Documents", *Essential Peirce* v. 2, see pp. 107-9. On Twenty Questions, p. 109:

> Thus, twenty skillful hypotheses will ascertain what 200,000 stupid ones might fail to do.

22. ^ Peirce (1878), "The Probability of Induction", *Popular Science Monthly*, v. 12, pp. 705-18, see718 *Google Books*; 718 via *Internet Archive*. Reprinted often, including (*Collected Papers*v. 2, paragraphs 669-93), (*The Essential Peirce* v. 1, pp. 155-69).
23. ^ Peirce (1905 draft "G" of "A Neglected Argument"), "Crude, Quantitative, and Qualitative Induction", *Collected Papers* v. 2, paragraphs 755–760, see 759. Find under "Induction" at*Commens Dictionary of Peirce's Terms*.
24. ^ . Brown, C. (2005) Overcoming Barriers to Use of Promising Research Among Elite Middle East Policy Groups, Journal of Social Behaviour and Personality, Select Press.
25. ^ Hanson, Norwood (1958), *Patterns of Discovery*, Cambridge University Press, ISBN 0-521-05197-5
26. ^ Kuhn 1962, p. 113 ISBN 978-1-4432-5544-8
27. ^ Feyerabend, Paul K (1960) "Patterns of Discovery" The Philosophical Review (1960) vol. 69 (2) pp. 247-252
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30. ^
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31. ^ *a* *b* *c* Dunbar, K., & Fugelsang, J. (2005). Causal thinking in science: How scientists and students interpret the unexpected. In M. E. Gorman, R. D. Tweney, D. Gooding & A. Kincannon (Eds.), Scientific and Technical Thinking (pp. 57-79). Mahwah, NJ: Lawrence Erlbaum Associates.
32. ^ *a* *b* Oliver, J.E. (1991) Ch2. of The incomplete guide to the art of discovery. New York:NY, Columbia University Press.
33. ^ Talib contributes a brief description of anti-fragility, http://www.edge.org/q2011/q11_3.html
34. ^ Riccardo Pozzo (2004) *The impact of Aristotelianism on modern philosophy*. CUA Press. p.41. ISBN 0-8132-1347-9
35. ^ The ancient Egyptians observed that heliacal rising of a certain star, *Sothis* (Greek for *Sopdet*(Egyptian), known to the West as *Sirius*), marked the annual flooding of the Nile river. SeeNeugebauer, Otto (1969) [1957], *The Exact Sciences in Antiquity* (2 ed.), Dover Publications,ISBN 978-0-486-22332-2, p.82, and also the 1911 *Britannica*, "Egypt".

36. ^ The Rhind papyrus lists practical examples in arithmetic and geometry —1911 *Britannica*, "Egypt".

37. ^ The Ebers papyrus lists some of the 'mysteries of the physician', as cited in the 1911*Britannica*, "Egypt"

38. ^ Rosanna Gorini (2003), "Al-Haytham the Man of Experience, First Steps in the Science of Vision", *International Society for the History of Islamic Medicine*, Institute of Neurosciences, Laboratory of Psychobiology and Psychopharmacology, Rome, Italy:

    "According to the majority of the historians al-Haytham was the pioneer of the modern scientific method. With his book he changed the meaning of the term optics and established experiments as the norm of proof in the field. His investigations are based not on abstract theories, but on experimental evidences and his experiments were systematic and repeatable."

39. ^ Niccolò Leoniceno (1509), *De Plinii et aliorum erroribus liber* apud Ferrara, as cited bySanches, Limbrick & Thomson 1988, p. 13

40. ^ 'I have sometimes seen a verbose quibbler attempting to persuade some ignorant person that white was black; to which the latter replied, "I do not understand your reasoning, since I have not studied as much as you have; yet I honestly believe that white differs from black. But pray go on refuting me for just as long as you like." '— Sanches, Limbrick & Thomson 1988, p. 276

41. ^ Sanches, Limbrick & Thomson 1988, p. 278.

42. ^ Bacon, Francis *Novum Organum* *(The New Organon)*, 1620. Bacon's work described many of the accepted principles, underscoring the importance of empirical results, data gathering and experiment. *Encyclopaedia Britannica* (1911), "Bacon, Francis" states: [In Novum Organum, we] "proceed to apply what is perhaps the most valuable part of the Baconian method, the process of exclusion or rejection. This elimination of the non-essential, ..., is the most important of Bacon's contributions to the logic of induction, and that in which, as he repeatedly says, his method differs from all previous philosophies."

43. ^ "John Stuart Mill (Stanford Encyclopedia of Philosophy)". plato.stanford.edu. Retrieved 2009-07-31.

44. ^ Gauch 2003, pp. 52–53

45. ^ George Sampson (1970). *The concise Cambridge history of English literature*. Cambridge University Press. p.174. ISBN 0-521-09581-6

46. ^ *Logik der Forschung*, new appendices **XVII–*XIX* (not yet available in the English edition*Logic of scientific discovery*)

47. ^ *Logic of Scientific discovery*, p. 20

48. ^ *a* *b* Karl Popper: On the non-existence of scientific method. *Realism and the Aim of Science*(1983)

49. ^ Karl Popper: Science: Conjectures and Refutations. *Conjectures and Refuations*, section VII

50. ^ Karl Popper: On knowledge. *In search of a better world*, section II

51. ^ "When we are working intensively, we feel keenly the progress of our work; we are elated when our progress is rapid, we are depressed when it is slow." — the mathematician Pólya 1957, p. 131 in the section on 'Modern heuristic'.

52. ^ "Philosophy [i.e., physics] is written in this grand book--I mean the universe--which stands continually open to our gaze, but it cannot be understood unless one first learns to comprehend the language and interpret the characters in which it is written. It is written in the language of mathematics, and its characters are triangles, circles, and other geometrical figures, without which it is humanly impossible to understand a single word of it; without these, one is wandering around in a dark labyrinth." —Galileo Galilei, *Il Saggiatore* (*The Assayer*, 1623), as translated by Stillman Drake (1957), *Discoveries and Opinions of Galileo* pp. 237-8, as quoted by di Francia 1981, p. 10.

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56. ^ Pólya 1957, p. 142
57. ^ Pólya 1957, p. 144
58. ^ Mackay 1991 p.100
59. ^ See the development, by generations of mathematicians, of Euler's formula for polyhedra as documented by Lakatos, Imre (1976), *Proofs and refutations*, Cambridge: Cambridge University Press, ISBN 0-521-29038-4

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- Scientific method at PhilPapers
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Philosophy of science

Legal burden of proof

From Wikipedia, the free encyclopedia

This article is about the burden of proof in law. For other uses, see Burden of proof (disambiguation).

This article **needs additional citations for verification**. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. *(October 2011)*

The examples and perspective in this article **deal primarily with the United States and do not represent a worldwide view of the subject**. Please improve this article and discuss the issue on the talk page. *(May 2012)*

The **burden of proof** (Latin: *onus probandi*) is the obligation to shift the accepted conclusion away from an oppositional opinion to one's own position.

The burden of proof is often associated with the Latin maxim *semper necessitas probandi incumbit ei qui agit*, the best translation of which seems to be: "the necessity of proof always lies with the person who lays charges."[1]

He who does not carry the burden of proof carries the benefit of assumption, meaning he needs no evidence to support his claim. Fulfilling the burden of proof effectively captures the benefit of assumption, passing the burden of proof off to another party.

Contents

[hide]

1 Definition

2 Standard of proof: United States

- 2.1 Legal standards
  - 2.1.1 Reasonable suspicion
  - 2.1.2 Reasonable to believe
  - 2.1.3 Probable cause for arrest
  - 2.1.4 Some credible evidence
  - 2.1.5 Substantial evidence
  - 2.1.6 Preponderance of the evidence
  - 2.1.7 Clear and convincing evidence
  - 2.1.8 Beyond reasonable doubt
- 2.2 Non-legal standards
  - 2.2.1 Beyond the shadow of a doubt

- 3 Standard of proof: United Kingdom trials
- 4 Other standards for presenting cases or defenses
  - 4.1 Air of reality
  - 4.2 Evidentiary standards of proof
- 5 Examples
  - 5.1 Criminal law
  - 5.2 Civil law
  - 5.3 Civil cases of the U.S. Supreme Court
- 6 See also
- 7 References
- 8 Bibliography
- 9 External links

[edit]Definition

A "legal burden" or a "burden of persuasion" is an obligation that remains on a single party for the duration of the claim. Once the burden has been entirely discharged to the satisfaction of the trier of fact, the party carrying the burden will succeed in its claim. For example, the presumption of innocence places a legal burden upon the prosecution to prove all elements of the offense (generally beyond a reasonable doubt) and to disprove all the defenses except for affirmative defenses in which the proof of non-existence of all affirmative defense(s) is not constitutionally required of the prosecution.[2]

It is not to be confused with evidential burden, which is an obligation that shifts between parties over the course of the hearing or trial. It is not a burden of proof, but the burden to adduce sufficient evidence to properly raise an issue at court.

[edit]Standard of proof: United States

Burden of proof refers most generally to the obligation of a party to prove its allegations at trial. In a civil case the plaintiff sets forth its allegations in a complaint, petition or other pleading. The defendant is then required to file a responsive pleading denying some or all of the allegations and setting forth any affirmative facts in defense affirmative defenses. Each party has the burden of proof of their allegations. In *In Re Rogers* the Alabama Supreme Court set forth a common explication of the concept as a jurisprudential maxim:

"The Sixth Edition of Black's Law Dictionary explained the parenthetical maxim as follows: ¶ 'Ei incumbit probatio, qui dicit, non qui negat; cum per rerum naturam factum negantis probatio nulla sit.... The proof lies upon him who affirms, not upon him who denies; since, by the nature of things, he who denies a fact cannot produce any proof. ¶ Black's Law Dictionary 516 (6th ed. 1990).'"[3]

[edit]Legal standards

[edit]Reasonable suspicion

Reasonable suspicion is a low standard of proof in the U.S. to determine whether a *brief* investigative stop or search by a police officer or any government agent is warranted. It is important to note that this stop and/or search must be brief; its thoroughness is proportional to, and limited by, the low standard of evidence. A more definite standard of proof (often probable cause) would be required to warrant a more thorough stop/search. In *Terry v. Ohio*, 392 U.S. 1 (1968), the United States Supreme Court ruled that reasonable suspicion requires specific, articulable, and individualized suspicion that crime is afoot. A mere guess or "hunch" is not enough to constitute reasonable suspicion.

An investigatory stop is a seizure under the Fourth Amendment. The state must justify the seizure by showing that the officer conducting the stop had a reasonable articulable suspicion that criminal activity was afoot. The important point is that officers cannot deprive a citizen of liberty unless the officer can point to specific facts and circumstances and inferences therefrom that would amount to a reasonable suspicion. The officer must be prepared to establish that criminal activity was a logical explanation for what he perceived. The requirement serves to prevent officers from stopping individuals based merely on hunches or unfounded suspicions. The purpose of the stop and detention is to investigate to the extent necessary to confirm or dispel the original suspicion. If the initial confrontation with the person stopped dispels suspicion of criminal activity the officer must end the detention and allow the person to go about his or her business. If the investigation confirms the officer's initial suspicion or reveals evidence that would justify continued detention the officer may require the person detained to remain at the scene until further investigation is complete. In some cases, the investigation may develop sufficient evidence to constitute probable cause.

[edit]Reasonable to believe

Recently, in *Arizona v. Gant,* the court defined a new standard, that of "reasonable to believe." This standard applies only to vehicle searches after the suspect has been placed under arrest and overruled *New York v. Belton* by saying it must be "reasonable to believe" there is more evidence in the vehicle of the crime the suspect was arrested for. Only then are police officers allowed to go back and search a vehicle incident to a suspect's arrest.

There is still an ongoing debate as to the exact meaning of this phrase. Some courts have said it should be a new standard while others have equated it with the "reasonable suspicion" of the *Terry* stop. Most courts have agreed it is somewhere less than probable cause

[edit]Probable cause for arrest

Main article: Probable cause

Probable cause is a relatively low standard of evidence, which is used in the United States to determine whether a search, or an arrest, is warranted. It is also used by grand juries to determine whether to issue an indictment. In the civil context, this standard is often used where plaintiffs are seeking a prejudgement remedy.

In the criminal context, the U.S. Supreme Court in *United States v. Sokolow*, 490 U.S. 1 (1989), determined that probable cause requires "a fair probability that contraband or evidence of a crime will be found" in determining whether Drug Enforcement Administration agents had a reason to execute a search. Courts vary when determining what constitutes a "fair probability": some[*who?*] say 30%, others 40%, others 51%.

A good illustration of this evidence/intrusiveness continuum might be a typical police/citizen interaction. Consider the following three interactions:

- **no level of suspicion required**: a consensual encounter between officer and citizen
- **reasonable suspicion required**: a stop initiated by the officer that would cause a reasonable person not to feel free to leave
- **probable cause required**: arrest.

[edit]Some credible evidence

One of the least reliable standards of proof, this assessment is often used in admistrative law, and often in Child Protective Services (CPS) proceedings in some states. The "Some Credible Evidence" standard is used as a legal place-holder to bring some controversy before a trier of fact, and into a legal process. It is on the order of the factual standard of proof needed to achieve a finding of "Probable Cause" used in ex parte threshold determinations needed before a court will issue a search warrant. It is a lower standard of proof than the "Preponderance of the Evidence" standard. The "Some Credible Evidence" standard does not require the fact-finder to weigh conflicting evidence, merely requiring the investigator or prosecutor to present the bare minimum of material credible evidence to support the allegations against the subject, or in support of the allegation; see *Valmonte v. Bane,* 18 F.3d 992 (2nd Cir. 1994). (In some Federal Appellate Circuit Courts, such as the Second Circuit, the "some credible evidence" standard has been found constitutionally insufficient to protect liberty interests of the parties in controversy at CPS hearings.)

[edit]Substantial evidence

In some appeals from decisions of administrative agencies, the courts apply a "substantial evidence" standard of review over the agency's factual findings. In the United States, for example, if aSocial Security Disability Insurance claimant is found "not disabled" (and, therefore, ineligible for benefits) by an Administrative Law Judge (ALJ) and the claimant appeals, both the Appeals Council (the body within the Social Security Administration that hears appeals from decisions of ALJs) and the Federal courts (which, in this type of case, will normally hear an appeal only after the claimant has exhausted all administrative remedies) will look to see whether the administrative law judge's decision was supported by "substantial evidence" or not. Substantial evidence is "more than a mere scintilla. It means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion."[4]

[edit]Preponderance of the evidence

Preponderance of the evidence, also known as **balance of probabilities** is the standard required in most civil cases.

This is also the standard of proof used in Grand Jury indictment proceedings (which, unlike civil proceedings, are procedurally unrebuttable), and in family court determinations solely involving money, such as child support under the Child Support Standards Act.

The standard is met if the proposition is more likely to be true than not true. Effectively, the standard is satisfied if there is greater than 50 percent chance that the proposition is true. Lord Denning, in *Miller v. Minister of Pensions*,[5] described it simply as "more probable than not." Until 1970, this was also the standard used in juvenile court in the United States.

This is also the standard of proof used when determining eligibility of unemployment benefits for a former employee accused of losing their job through alleged misconduct. In most US states, the employer must prove this case based on preponderance of the evidence.

[edit]Clear and convincing evidence

Clear and convincing evidence is a higher level of burden of persuasion than a "Preponderance of the Evidence". It is employed intra-adjudicatively in Administrative Court determinations, as well as in civil and certain criminal procedure in the United States. For example, a prisoner seeking *habeas corpus* relief from capital punishment must prove his factual innocence by clear and convincing evidence.[6]

This standard is used in many types of equity cases, including paternity, PINS, juvenile delinquency, child custody, the probate of both wills and living wills, petitions to remove a person from life support ("right to die" cases),[7] and many similar cases.

Clear and convincing proof means that the evidence presented by a party during the trial must be highly and substantially more probable to be true than not and the trier of fact must have a firm belief or conviction in its factuality. In this standard, a greater degree of believability must be met than the common standard of proof in civil actions, "Preponderance of the Evidence", which requires that the facts as a threshold be more likely than not to prove the issue for which they are asserted.

This standard is also known as "Clear and Convincing Evidence"; "Clear, Convincing, and Satisfactory Evidence"; "Clear, Cognizant, and Convincing Evidence"; and "Clear, Unequivocal, Satisfactory, and Convincing Evidence", and is applied in cases or situations involving an equitable remedy or where a presumptive civil liberty interest exists.

[edit]Beyond reasonable doubt

Main article: Reasonable doubt

This is the highest standard used as the burden of proof in Anglo-American jurisprudence and typically only applies in criminal proceedings.

It has been described as, in negative terms, as a proof having been met if there is no plausible reason to believe otherwise.

If there is a real doubt, based upon reason and common sense after careful and impartial consideration of all the evidence, or lack of evidence, in a case, then the level of proof has not been met.

Proof beyond a reasonable doubt, therefore, is proof of such a convincing character that you would be willing to rely and act upon it without hesitation in the most important of your own affairs. However, it does not mean an absolute certainty. The standard that must be met by the prosecution's evidence in a criminal prosecution is that no other logical explanation can be derived from the facts except that the defendant committed the crime, thereby overcoming the presumption that a person is innocent until proven guilty.

If the trier of fact has no doubt as to the defendant's guilt, or if their only doubts are unreasonable doubts, then the prosecutor has proven the defendant's guilt beyond a reasonable doubt and the defendant should be pronounced guilty.

The term connotes that evidence establishes a particular point to a moral certainty and that it is beyond dispute that any reasonable alternative is possible. It does not mean that no doubt exists as to the accused's guilt, but only that no Reasonable Doubt is possible from the evidence presented.

The main reason that the high proof standard of reasonable doubt is used in criminal trials is that such proceedings can result in the deprivation of a defendant's liberty or even in his or her death. These outcomes are far more severe than in civil trials, in which monetary damages are the common remedy.

[edit]Non-legal standards

[edit]Beyond the shadow of a doubt

Main article: Beyond the shadow of a doubt

Beyond the shadow of a doubt is the strictest standard of proof. It requires that there be no doubt as to the issue. Widely considered an impossible standard, a situation stemming from the nature of knowledge itself, it is valuable to mention only as a comment on the fact that evidence in a court never need (nor *can*) reach this level. This phrase, has, nonetheless, come to be associated with the law in popular culture.

[edit]Standard of proof: United Kingdom trials

In the three jurisdictions of the UK (Northern Ireland; England & Wales; and Scotland) there are only two standards of proof in trials. (There are others which are defined in Statutes relating to police powers etc.)

The Criminal standard was formerly described as "beyond reasonable doubt". That standard remains, and the words commonly used, though the Judicial Studies Board guidance is that juries might be assisted by being told that to convict they must be persuaded "so that you are sure".

The Civil standard is 'the balance of probabilities', often referred to in judgments as "more likely than not". Prior to the decision of the House of Lords in *Re B (A Child)* [2008] UKHL 35 [1] there had been some confusion - even at the Court of Appeal - as to whether there was some intermediate standard, described as the 'heightened standard'. The House of Lords found that there was not. As the above description of the American system shows, anxiety by judges to make decisions on very serious matters on the basis of the balance of probabilities had led to a departure from the common law principles of just two standards. Baroness Hale said:

"70. ...Neither the seriousness of the allegation nor the seriousness of the consequences should make any difference to the standard of proof to be applied in determining the facts. The inherent probabilities are simply something to be taken into account, where relevant, in deciding where the truth lies."

"72. ...there is no logical or necessary connection between seriousness and probability. Some seriously harmful behaviour, such as murder, is sufficiently rare to be inherently improbable in most circumstances. Even then there are circumstances, such as a body with its throat cut and no weapon to hand, where it is not at all improbable. Other seriously harmful behaviour, such as alcohol or drug abuse, is regrettably all too common and not at all improbable. Nor are serious allegations made in a vacuum. Consider the famous example of the animal seen in Regent’s Park. If it is seen outside the zoo on a stretch of greensward regularly used for walking dogs, then of course it is more likely to be a dog than a lion. If it is seen in the zoo next to the lions’ enclosure when the door is open, then it may well be more likely to be a lion than a dog."

The task for the tribunal then when faced with serious allegations is to recognise that their seriousness generally means they are inherently unlikely, such that to be satisfied that a fact is more likely than not the evidence must be of a good quality. But the standard of proof remains 'the balance of probabilities'.

[edit]Other standards for presenting cases or defenses

[edit]**Air of reality**

The "air of reality" is a standard of proof used in Canada to determine whether a criminal defense may be used. The test asks whether a defense can be successful if it is assumed that all the claimed facts are to be true. In most cases, the burden of proof rests solely on the prosecution, negating the need for a defense of this kind. However, when exceptions arise and the burden of proof has been shifted to the defendant, he is required to establish a defense that bears an "air of reality." Two instances in which such a case might arise are, first, when a prima facie case has been made against the defendant or, second, when the defense mounts an affirmative defense, such as the insanity defense.

[edit]Evidentiary standards of proof

Depending on the legal venue, and/or intra-case hearing, varying levels of reliability of proof are considered dispositive of the inquiry being entertained. If the subject threshold level of reliability has been met by the presentation of the evidence, then the thing is considered legally proven for that trial, hearing or inquest.

[edit]Examples

[edit]Criminal law

In the West, criminal cases usually place the burden of proof on the prosecutor (expressed in the Latin brocard ***ei incumbit probatio qui dicit, non qui negat***, "the burden of proof rests on who asserts, not on who denies"). This principle is known as the presumption of innocence, and is summed up with "innocent until proven guilty," but is not upheld in all legal systems or jurisdictions. Where it is upheld, the accused will be found not guilty if this burden of proof is not sufficiently shown by the prosecution.

The presumption of innocence means three things:

1. With respect to the critical facts of a case the defendant has no burden of proof whatsoever.[8]
2. The state must prove the critical facts of the case to the appropriate level of certainty.
3. The jury is not to draw any inferences adverse to the defendant from the fact that he has been charged with a crime and is present in court represented by counsel to face the charges against him.

The presumption of innocence does not mean that the jury or anyone else must pretend or assume that the defendant is in fact innocent of the charges. Nothing the jury does can alter the fact that the defendant did or did not commit the offense. There is no intermediate state.

For example, if the defendant (D) is charged with murder, the prosecutor (P) bears the burden of proof to show the jury that D did murder someone.

- Burden of proof: P
    - Burden of production: P has to show some evidence that D had committed murder. The United States Supreme Court has ruled that the Constitution requires

enough evidence to justify a rational trier of fact to find guilt beyond a reasonable doubt. If the judge rules that such burden has been met, then of course it is up to the jury itself to decide if they are, in fact, convinced of guilty beyond a reasonable doubt.[9] If the judge finds there is not enough evidence under the standard, the case must be dismissed (or a subsequent guilty verdict must be vacated and the charges dismissed).

  - e.g. witness, forensic evidence, autopsy report
  - Failure to meet the burden: the issue will be decided as a matter of law (the judge makes the decision), in this case, D is presumed innocent
- Burden of persuasion: if at the close of evidence, the jury cannot decide if P has established with relevant level of certainty that D had committed murder, the jury must find D not guilty of the crime of murder
  - Measure of proof: P has to prove every element of the offence beyond a reasonable doubt, but not necessarily prove every single fact beyond a reasonable doubt.

In other countries, criminal law reverses the burden of proof, and there is a presumption of guilt.[*citation needed*]

However, in England and Wales, the Magistrates' Courts Act 1980, s.101 stipulates that where a defendant relies on some "exception, exemption, proviso, excuse or qualification" in his defence, the legal burden of proof as to that exception falls on the defendant, though only on the balance of probabilities. For example, a person charged with being drunk in charge of a motor vehicle can raise the defence that there was no likelihood of his driving while drunk.[10] The prosecution has the legal burden of proof beyond reasonable doubt that the defendant exceeded the legal limit of alcohol and was in control of a motor vehicle. Possession of the keys is usually sufficient to prove control, even if the defendant is not in the vehicle and is perhaps in a nearby bar. That being proved, the defendant has the legal burden of proof on the balance of probabilities that he was not likely to drive.[11]

In 2002, such practice in England and Wales was challenged as contrary to the European Convention on Human Rights (ECHR), art.6(2) guaranteeing right to a fair trial. The House of Lords held that:[11][12]

- A mere evidential burden did not contravene art.6(2);
- A legal/ persuasive burden did not necessarily contravene art.6(2) so long as confined within reasonable limits, considering the questions:
  - *What must the prosecution prove to transfer burden to the defendant?*
  - *Is the defendant required to prove something difficult or easily within his access?*
  - *What threat to society is the provision designed to combat?*

[edit]Civil law

In civil law cases, the "burden of proof" requires the plaintiff to convince the trier of fact (whether judge or jury) of the plaintiff's entitlement to the relief sought. This means that the plaintiff must prove each element of the claim, or cause of action, in order to recover. However, in cases of proving loss of future earning capacity, the plaintiff must prove there is a real or substantial possibility of such a loss occurring.

The burden of proof must be distinguished from the "burden of going forward," which simply refers to the sequence of proof, as between the plaintiff and defendant. The two concepts are often confused.

[edit]Civil cases of the U.S. Supreme Court

In *Keyes v. Sch. Dist. No. 1*, 413 U.S. 189 (1973), the United States Supreme Court stated: “There are no hard-and-fast standards governing the allocation of the burden of proof in every situation. The issue, rather, ‘is merely a question of policy and fairness based on experience in the different situations.’” For support, the Court cited 9 John H. Wigmore, Evidence § 2486, at 275 (3d ed. 1940). In *Keyes*, the Supreme Court held that if “school authorities have been found to have practised purposeful segregation in part of a school system,” the burden of persuasion shifts to the school to prove that it did not engage in such discrimination in other segregated schools in the same system.

In *Director, Office of Workers’ Compensation Programs v. Greenwich Collieries*, 512 U.S. 267 (1994), the Supreme Court explained that *burden of proof* is ambiguous because it has historically referred to two distinct burdens: the *burden of persuasion*, and the *burden of production*.

The Supreme Court discussed how courts should allocate the burden of proof (i.e., the burden of persuasion) in *Schaffer ex rel. Schaffer v. Weast*, 546 U.S. 49 (2005). The Supreme Court explained that if a statute is silent about the burden of persuasion, the court will “begin with the ordinary default rule that plaintiffs bear the risk of failing to prove their claims.” In support of this proposition, the Court cited 2 J. Strong, McCormick on Evidence § 337, 412 (5th ed. 1999), which states:

The burdens of pleading and proof with regard to most facts have been and should be assigned to the plaintiff who generally seeks to change the present state of affairs and who therefore naturally should be expected to bear the risk of failure of proof or persuasion.

At the same time, the Supreme Court also recognized “The ordinary default rule, of course, admits of exceptions.” “For example, the burden of persuasion as to certain elements of a plaintiff's claim may be shifted to defendants, when such elements can fairly be characterized as affirmative defenses or exemptions. See, e.g., *FTC v. Morton Salt Co.*, 334 U.S. 37, 44-45 (1948). Under some circumstances this Court has even placed the burden of persuasion over an entire claim on the defendant. See *Alaska Dept. of Environmental Conservation v. EPA*, 540 U.S. 461 (2004).” Nonetheless, “[a]bsent some reason to believe that Congress intended otherwise, therefore, [the Supreme Court] will conclude that the burden of persuasion lies where it usually falls, upon the party seeking relief.”

[edit]See also

- Philosophic burden of proof
- Probative
- Rebuttable presumption

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1. ^ Transnational principle of law: Trans-Lex.org
2. ^ *Patterson v. New York, 432 U.S. 197 (1977)*
3. ^ "Anthony Rogers v. Penske Truck Leasing: case 1080880". Supreme Court of Alabama. December 30, 2010.
4. ^ *See Richardson v. Perales*, 402 U.S. 389, 401 (1971), *quoting from Consolidated Edison Co. v. NLRB*, 305 U. S. 197, 229 (1938).
5. ^ *Miller v. Minister of Pensions* [1947] 2 All ER 372
6. ^ *Calderon v. Thompson*, 523 U.S. 538 (1998). The petitioner, Thomas M. Thompson, a convicted rapist/murderer, was executed on July 14, 1998.
7. ^ See, *Quinlan v. New Jersey*, and *Cruzan v. Director, Missouri Department of Health*, 497 U.S. 261 (1990).
8. ^ The critical facts of a criminal case are whether the crime charged was committed and whether the defendant is criminally responsible for the commission of the crime
9. ^ *Jackson v. Virginia*, 443 U.S. 307 (1979).
10. ^ Road Traffic Offenders Act 1988, s.5(2)
11. ^ *a* *b* Herring, J. (2004). *Criminal Law: Text, Cases, and Materials*. Oxford: Oxford University Press. pp. 58–64. ISBN 0-19-876578-9.
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Circular reasoning

From Wikipedia, the free encyclopedia

Circular reasoning (also known as **paradoxical thinking**[*citation needed*] or **circular logic**), is a logical fallacy in which "the reasoner begins with what he or she is trying to end up with".[1] The individual components of a circular argument will sometimes be logically valid because if the premises are true, the conclusion must be true, and will not lack relevance. Circular logic cannot prove a conclusion because, if the conclusion is doubted, the premise which leads to it will also be doubted.[2] Begging the question is a form of circular reasoning.[3]

Academic Douglas Walton used the following example of a fallacious circular argument:

> Wellington is in New Zealand.
> Therefore, Wellington is in New Zealand[4]

He notes that, although the argument is deductively valid, it cannot prove that Wellington is in New Zealand because it contains no evidence that is distinct from the conclusion. The context – that of an argument – means that the proposition does not meet the requirement of proving the statement, thus it is a fallacy. He proposes that the context of a dialogue determines whether a circular argument is fallacious: if it forms part of an argument, then it is.[4] Citing Cederblom and Paulsen 1986:109) Hugh G. Gauch observes that non-logical facts can be difficult to capture formally:

"Whatever is less dense than water will float, because whatever is less dense than water will float" sounds stupid, but "Whatever is less dense than water will float, because such objects won't sink in water" might pass.[5]

Circular reasoning is often of the form: "a is true because b is true; b is true because a is true." Circularity can be difficult to detect if it involves a longer chain of propositions.

[edit]Circular reasoning and the problem of induction

Joel Feinberg and Russ Shafer-Landau note that "using the scientific method to judge the scientific method is circular reasoning". Scientists attempt to discover the laws of nature and to predict what will happen in the future, based on those laws. However, per David Hume's problem of induction, science cannot be proven inductively by empirical evidence, and thus science cannot be proven scientifically. An appeal to a *principle of the uniformity of nature* would be required to deductively necessitate the continued accuracy of predictions based on laws that have only succeeded in generalizing past observations. But as Bertrand Russell observed, "The method of 'postulating' what we want has many advantages; they are the same as the advantages of theft over honest toil".[6]

[edit]See also

- Argument from authority
- Coherentism
- I'm entitled to my opinion
- Polysyllogism

- Self-reference
- Tautology (rhetoric)

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Circular reasoning is often of the form: "a is true because b is true; b is true because a is true." Circularity can be difficult to detect if it involves a longer chain of propositions.

[edit]Circular reasoning and the problem of induction

Joel Feinberg and Russ Shafer-Landau note that "using the scientific method to judge the scientific method is circular reasoning". Scientists attempt to discover the laws of nature and to predict what will happen in the future, based on those laws. However, per David Hume's problem of induction, science cannot be proven inductively by empirical evidence, and thus science cannot be proven scientifically. An appeal to a *principle of the uniformity of nature* would be required to deductively necessitate the continued accuracy of predictions based on laws that have only succeeded in generalizing past observations.

But as Bertrand Russell observed, "The method of 'postulating' what we want has many advantages; they are the same as the advantages of theft over honest toil".[6]

[edit]See also

- Argument from authority
- Coherentism
- I'm entitled to my opinion
- Polysyllogism
- Self-reference
- Tautology (rhetoric)

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Correlation does not imply causation

From Wikipedia, the free encyclopedia

(Redirected from Circular cause and consequence)

"**Correlation does not imply causation**" is a phrase used in science and statistics to emphasize that a correlation between two variables does not necessarily imply that one causes the other.[1][2] Many statistical tests calculate correlation between variables. A few go further and calculate the likelihood of a true causal relationship; examples are the Granger causality test andconvergent cross mapping.

The opposite assumption, that **correlation proves causation**, is one of several questionable cause logical fallacies by which two events that occur *together* are taken to have a cause-and-effect relationship. The fallacy is also known as *cum hoc ergo propter hoc* (Latin for "with this, therefore because of this") and *false cause*. A similar fallacy, that an event that follows another wasnecessarily a consequence of the first event, is sometimes described as *post hoc ergo propter hoc*.

In a widely studied example, numerous epidemiological studies showed that women who were taking combined hormone replacement therapy (HRT) also had a lower-than-average incidence ofcoronary heart disease (CHD), leading doctors to propose that HRT was protective against CHD. But randomized controlled trials showed that HRT caused a small but statistically significant*increase* in risk of CHD. Re-analysis of the data from the epidemiological studies showed that women undertaking HRT were more likely to be from higher socio-economic groups (ABC1), with better-than-average diet and exercise regimens. The use of HRT and decreased incidence of coronary heart disease were coincident effects of a common cause (i.e. the benefits associated with a higher socioeconomic status), rather than cause and effect, as had been supposed.[3]

As with any logical fallacy, identifying that the reasoning behind an argument is flawed does not imply that the resulting conclusion is false. In the instance above, if the trials had found that hormone replacement therapy caused a decrease in coronary heart disease, but not to the degree suggested by the epidemiological studies, the assumption of causality would have been correct, although the logic behind the assumption would still have been flawed.

Contents

[hide]

1 Usage

2 General pattern

3 Examples of illogically inferring causation from correlation

- 3.1 B causes A (reverse causation)
- 3.2 A causes B and B causes A (bidirectional causation)
- 3.3 Third factor C (the common-causal variable) causes both A and B
- 3.4 Coincidence

4 Relation to the Ecological fallacy

5 Determining causation

6 See also

7 References

8 External links

Usage

In logic, the technical use of the word "implies" means "to be a *sufficient* circumstance." This is the meaning intended by statisticians when they say causation is not certain. Indeed, *p implies q*has the technical meaning of logical implication: *if p then q* symbolized as $p \rightarrow q$. That is "if circumstance *p* is true, then *q* necessarily follows." In this sense, it is always correct to say "Correlation does not *imply* causation."

However, in casual use, the word "imply" loosely means *suggests* rather than *requires*. The idea that correlation and causation are connected is certainly true; where there is causation, there is likely to be correlation. Indeed, correlation is used when inferring causation; the important point is that such inferences are not always correct because there are other possibilities, as explained later in this article.

Edward Tufte, in a criticism of the brevity of "correlation does not imply causation," deprecates the use of "is" to relate correlation and causation (as in "Correlation is not causation"), citing its inaccuracy as incomplete.[1] While it is not the case that correlation is causation, simply stating their nonequivalence omits information about their relationship. Tufte suggests that the shortest true statement that can be made about causality and correlation is one of the following:[4]

- "Empirically observed covariation is a necessary but not sufficient condition for causality."
- "Correlation is not causation but it sure is a hint."

[edit]General pattern

For any two correlated events A and B, the following relationships are possible:

- A causes B;
- B causes A;
- A and B are consequences of a common cause, but do not cause each other;
- There is no connection between A and B, the correlation is coincidental.

Less clear-cut correlations are also possible. For example, causality is not necessarily one-way; in a predator-prey relationship, predator numbers affect prey, but prey numbers, i.e. food supply, also affect predators.

The *cum hoc ergo propter hoc* logical fallacy can be expressed as follows:

1. *A* occurs in correlation with *B*.
2. Therefore, *A* causes *B*.

In this type of logical fallacy, one makes a premature conclusion about causality after observing only a correlation between two or more factors. Generally, if one factor (*A*) is observed to only be correlated with another factor (*B*), it is sometimes taken for granted that *A* is causing *B*, even when no evidence supports it. This is a logical fallacy because there are at least five possibilities:

1. *A* may be the cause of *B*.
2. *B* may be the cause of *A*.
3. some unknown third factor *C* may actually be the cause of both *A* and *B*.
4. there may be a combination of the above three relationships. For example, *B* may be the cause of *A* at the same time as *A* is the cause of *B* (contradicting that the only relationship between *A* and *B* is that *A* causes *B*). This describes a self-reinforcing system.
5. the "relationship" is a coincidence or so complex or indirect that it is more effectively called a coincidence (i.e. two events occurring at the same time that have no direct relationship to each other besides the fact that they are occurring at the same time). A larger sample size helps to reduce the chance of a coincidence, unless there is a systematic error in the experiment.

In other words, there can be no conclusion made regarding the *existence* or the *direction* of a cause and effect relationship only from the fact that A and B are correlated. Determining whether there is an actual cause and effect relationship requires further investigation, even when the relationship between *A* and *B* is statistically significant, a large effect size is observed, or a large part of the variance is explained.

[edit]Examples of illogically inferring causation from correlation

B causes A (reverse causation)

> The more firemen fighting a fire, the bigger the fire is observed to be.
>
> Therefore firemen cause an increase in the size of a fire.
>
> In this example, the correlation between the number of firemen at a scene and the size of the fire does not imply that the firemen cause the fire. Firemen are sent according to the severity of the fire and if there is a large fire, a greater number of firemen are sent; therefore, it is rather that fire causes firemen to arrive at the scene. So the above conclusion is false.

A causes B and B causes A (bidirectional causation)

> Increased pressure is associated with increased temperature.
>
> Therefore pressure causes temperature.
>
> The ideal gas law, $PV = nRT$, describes the direct relationship between pressure and temperature (along with other factors) to show that there is a direct correlation between the two properties. For a fixed volume and mass of gas, an increase in temperature will cause an increase in pressure; likewise, increased pressure will cause an increase in temperature. This demonstrates bidirectional causation. The conclusion that pressure causes temperature is true but is not logically guaranteed by the premise.

Third factor C (the common-causal variable) causes both A and B

Main article: Spurious relationship

All these examples deal with a lurking variable, which is simply a hidden third variable that affects both causes of the correlation; for example, the fact that it is summer in Example 3. A difficulty often also arises where the third factor, though fundamentally different from A and B, is so closely related to A and/or B as to be confused with them or very difficult to scientifically disentangle from them (see Example 4).

Example 1

> Sleeping with one's shoes on is strongly correlated with waking up with a headache.
>
> Therefore, sleeping with one's shoes on causes headache.

The above example commits the correlation-implies-causation fallacy, as it prematurely concludes that sleeping with one's shoes on causes headache. A more plausible explanation is that both are caused by a third factor, in this case going to bed drunk, which thereby gives rise to a correlation. So the conclusion is false.

Example 2

> Young children who sleep with the light on are much more likely to develop myopia in later life.
>
> Therefore, sleeping with the light on causes myopia.

This is a scientific example that resulted from a study at the University of Pennsylvania Medical Center. Published in the May 13, 1999 issue of *Nature*,[5] the study received much coverage at the time in the popular press.[6] However, a later study at Ohio State University did not find that infants sleeping with the light on caused the development of myopia. It did find a strong link between parental myopia and the development of child myopia, also noting that myopic parents were more likely to leave a light on in their children's bedroom.[7][8][9][10] In this case, the cause of both conditions is parental myopia, and the above-stated conclusion is false.

Example 3

> As ice cream sales increase, the rate of drowning deaths increases sharply.
>
> Therefore, ice cream consumption causes drowning.

The aforementioned example fails to recognize the importance of time and temperature in relationship to ice cream sales. Ice cream is sold during the hot summer months at a much greater rate than during colder times, and it is during these hot summer months that people are more likely to engage in activities involving water, such as swimming. The increased drowning deaths are simply caused by more exposure to water-based activities, not ice cream. The stated conclusion is false.

Example 4

> A hypothetical study shows a relationship between test anxiety scores and shyness scores, with a statistical *r* value (strength of correlation) of +.59.[11]
>
> Therefore, it may be simply concluded that shyness, in some part, causally influences test anxiety.

However, as encountered in many psychological studies, another variable, a "self-consciousness score," is discovered which has a sharper correlation (+.73) with shyness. This suggests a possible "third variable" problem, however, when three such closely related measures are found, it further suggests that each may have bidirectional tendencies (see "bidirectional variable," above), being a cluster of correlated values each influencing one another to some extent. Therefore, the simple conclusion above may be false.

Example 5

> Since the 1950s, both the atmospheric CO_2 level and obesity levels have increased sharply.
>
> Hence, atmospheric CO_2 causes obesity.

Richer populations tend to eat more food and consume more energy

Example 6

> HDL ("good") cholesterol is negatively correlated with incidence of heart attack.
>
> Therefore, taking medication to raise HDL will decrease the chance of having a heart attack.

Further research[12] has called this conclusion into question. Instead, it may be that other underlying factors, like genes, diet and exercise, affect both HDL levels and the likelihood of having a heart attack; it is possible that medicines may affect the directly measurable factor, HDL levels, without affecting the chance of heart attack.

Coincidence

> With a decrease in the wearing of hats, there has been an increase in global warming over the same period.
>
> Therefore, global warming is caused by people abandoning the practice of wearing hats.

A similar example is used by the parody religion Pastafarianism to illustrate the logical fallacy of assuming that correlation equals causation.

Relation to the Ecological fallacy

There is a relation between this subject-matter and the Ecological fallacy, described in a 1950 paper by William S. Robinson.[13] Robinson shows that ecological correlations, where the statistical object is a group of persons (i.e. an ethnic group), does not show the same behaviour as individual correlations, where the objects of inquiry are individuals: "The relation between ecological and individual correlations which is discussed in this paper provides a definite answer as to whether ecological correlations can validly be used as substitutes for individual correlations. They cannot." (...) "(a)n ecological correlation is almost certainly not equal to its corresponding individual correlation."

Determining causation

David Hume argued that causality is based on experience, and experience similarly based on the assumption that the future models the past, which in turn can only be based on experience – leading to circular logic. In conclusion, he asserted that causality is not based on actual reasoning: only correlation can actually be perceived.[14]

In order for a correlation to be established as causal, the cause and the effect must be connected through an impact mechanism in accordance with known laws of nature.

Intuitively, causation seems to require not just a correlation, but a counterfactual dependence. Suppose that a student performed poorly on a test and guesses that the cause was his not studying. To prove this, one thinks of the counterfactual – the same student writing the same test under the same circumstances but having studied the night before. If one could rewind history, and change only one small thing (making the student study for the exam), then causation could be observed (by comparing version 1 to version 2). Because one cannot rewind history and replay events after making small controlled changes, causation can only be inferred, never exactly known. This is referred to as the Fundamental Problem of Causal Inference – it is impossible to directly observe causal effects.[15]

A major goal of scientific experiments and statistical methods is to approximate as best as possible the counterfactual state of the world.[16] For example, one could run an experiment on identical twins who were known to consistently get the same grades on their tests. One twin is sent to study for six hours while the other is sent to the amusement park. If their test scores suddenly diverged by a large degree, this would be strong evidence that studying (or going to the amusement park) had a causal effect on test scores. In this case, correlation between studying and test scores would almost certainly imply causation.

Well-designed experimental studies replace equality of individuals as in the previous example by equality of groups. This is achieved by randomization of the subjects to two or more groups. Although not a perfect system, the likeliness of being equal in all aspects rises with the number of subjects placed randomly in the treatment/placebo groups. From the significance of the difference of the effect of the treatment vs. the placebo, one can conclude the likeliness of the treatment having a causal effect on the disease. This likeliness can be quantified in statistical terms by the P-value[*dubious* – *discuss*].

When experimental studies are impossible and only pre-existing data are available, as is usually the case for example in economics, regression analysis can be used. Factors other than the potential causative variable of interest are controlled for by including them as regressors in addition to the regressor representing the variable of interest. False inferences of causation due to reverse causation (or wrong estimates of the magnitude of causation due the presence of bidirectional causation) can be avoided by using explanators (regressors) that are necessarily exogenous, such as physical explanators like rainfall amount (as a determinant of, say, futures prices), lagged variables whose values were determined before the dependent variable's value was determined,instrumental variables for the explanators (chosen based on their known exogeneity), etc. See Causality#Statistics and Economics. Spurious correlation due to mutual influence from a third, common, causative variable, is harder to avoid: the model must be specified such that there is a theoretical reason to believe that no such underlying causative variable has been omitted from the model; in particular, underlying time trends of both the dependent variable and the independent (potentially causative) variable must be controlled for by including time as another independent variable.

See also

- Affirming the consequent
- Chain reaction
- Confirmation bias
- Confounding
- Design of experiments
- Domino effect
- Ecological fallacy
- Four causes
- Mierscheid Law
- Normally distributed and uncorrelated does not imply independent
- Observational study
- Occam's razor
- Pirates and global warming

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[edit]External links

- "The Art and Science of cause and effect": a slide show and tutorial lecture by Judea Pearl
- Causal inference in statistics: An overview, by Judea Pearl (September 2009)

Continuum fallacy

From Wikipedia, the free encyclopedia

The **continuum fallacy** (also called the **fallacy of the beard**,[1] **line drawing fallacy**, **bald man fallacy**, **fallacy of the heap**, the **fallacy of grey**, the **sorites fallacy**) is an informal fallacyclosely related to the sorites paradox, or paradox of the heap. The fallacy causes one to erroneously reject a vague claim simply because it is not as precise as one would like it to be. Vagueness alone does not necessarily imply invalidity.

The fallacy appears to demonstrate that two states or conditions cannot be considered distinct (or do not exist at all) because between them there exists a continuum of states. According to the fallacy, differences in quality cannot result from differences in quantity.

There are clearly reasonable and clearly unreasonable cases in which objects either belong or do not belong to a particular group of objects based on their properties. We are able to take them case by case and designate them as such even in the case of properties which may be vaguely defined. The existence of hard or controversial cases does not preclude our ability to designate members of particular kinds of groups.

Contents

[hide]

1 Relation with sorites paradox

2 Examples

○ 2.1 Fred can never be called bald

○ 2.2 The heap

○ 2.3 Others

3 References

4 See also

[edit]Relation with sorites paradox

Narrowly speaking, the sorites paradox refers to situations where there are many *discrete* states (classically between 1 and 1,000,000 grains of sand, hence 1,000,000 possible states), while the continuum fallacy refers to situations where there is (or appears to be) a *continuum* of states, such as temperature – is a room hot or cold? Whether any continua exist in the physical world is the classic question of atomism, and while Newtonian physics models the world as continuous, in modern quantum physics, notions of continuous length break down at the Planck length, and thus what appear to be continua may, at base, simply be very many discrete states.

For the purpose of the continuum fallacy, one assumes that there is in fact a continuum, though this is generally a minor distinction: in general, any argument against the sorites paradox can also be used against the continuum fallacy. One argument against the fallacy is based on the simple counterexample: there do exist bald people and people who aren't bald. Another argument is that for each degree of change in states, the degree of the condition changes slightly, and these "slightly"s build up to shift the state from one category to another. For example, perhaps the addition of a grain of rice causes the total group of rice to be "slightly more" of a heap, and enough "slightly"s will certify the group's heap status – see fuzzy logic.

[edit]Examples

Fred can never be called bald

Fred can never be called bald. Fred isn't bald now. However, if he loses one hair, that won't make him go from not bald to bald either. If he loses one more hair after that, this loss of a second hair also does not make him go from not bald to bald. Therefore, no matter how much hair he loses, he can never be called bald.

[edit]The heap

The fallacy can be described in the form of a conversation:

> Q: Does one grain of wheat form a heap?
>
> A: No.
>
> Q: If we add one, do two grains of wheat form a heap?
>
> A: No.
>
> Q: If we add one, do three grains of wheat form a heap?
>
> A: No.
>
> ...
>
> Q: If we add one, do one hundred grains of wheat form a heap?
>
> A: No.
>
> Q: Therefore, no matter how many grains of wheat we add, we will never have a heap. Therefore, heaps don't exist!

Others

Other uses of this fallacy seem to prove that:

- No man has a beard, no matter how long it is (or every post-pubescent male has a beard, no matter how cleanly shaven) because a beard can have varying lengths.
- A room is never either "hot" or "cold", because of the continuum of temperatures.

- Day fades into night, therefore day and night are not meaningfully different.

References

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[edit]See also

- Imprecise language
- Fuzzy logic
- Closed concept

Correlative-based fallacies

From Wikipedia, the free encyclopedia

In philosophy, **correlative-based fallacies**, also known as **fallacies of distraction**, are informal fallacies based on correlative conjunctions.

Contents

[hide]

1 Correlative conjunctions
○ 1.1 Examples
2 Fallacies
3 See also

[edit]Correlative conjunctions

A correlative conjunction is a relationship between two statements where one must be false and the other true. In formal logic this is known as the exclusive or relationship; traditionally, terms between which this relationship exists have been called *contradictories*.

[edit]Examples

In the following example, statement *b* explicitly negates statement *a*:

a. Fido is a dog.
b. Fido is not a dog.

Statements can also be mutually exclusive, without explicitly negating each other as in the following example:

a. Object one is larger than object two.
b. Object one is smaller or the same size as object two.

[edit]Fallacies

Fallacies based on correlatives include:

False dilemma or *false correlative*.

Here something which is not a correlative is treated as a correlative, excluding some other possibility.

Denying the correlative

where an attempt is made to introduce another option into a true correlative.

Suppressed correlative

where the definitions of a correlative are changed so that one of the options includes the other, making one option impossible.

[edit]See also

- Logical conjunction
- Logical disjunction

Suppressed correlative

From Wikipedia, the free encyclopedia

The fallacy of **suppressed correlative** is a type of argument that tries to redefine a correlative (one of two mutually exclusive options) so that one alternative encompasses the other, i.e. making one alternative impossible.[1] This has also been known as the fallacy of lost contrast[2] and the fallacy of the suppressed relative.[3]

Contents

[hide]

1 Description

2 Usage

3 See also

4 References

[edit]Description

A conceptual example:

> Person 1: "All things are either X or not X." *(The correlatives: X–not X.)*
>
> Person 2: "I define X such that all things that you claim are not X are included in X." *(The suppressed correlative: not X.)*

Alternatively Person 2 can redefine X in way that instead concludes all things are not X.

A simple example based on one by Alexander Bain:[4]

> Person 1: "Things are either mysterious or not mysterious. Exactly when an earthquake will strike is still a mystery, but how blood circulates in the body is not."
>
> Person 2: "*Everything* is mysterious. There are still things to be learned about how blood circulates."

Regardless of whether Person 2's statement about blood circulation is true or not, the redefinition of "mysterious" is so broad that it omits significant contrast in the level of scientific understanding between earthquakes and blood circulation. Bain argues that if we hold the origin of the universe as equally mysterious against simple equations such as 3×4=12, it seems unimaginable what kind of concepts would be described as *non*-mysterious. Through redefinition "mysterious" has lost any useful meaning, he says.

The redefinition is not always so obvious. At first glance it might appear reasonable to define brakes as "a method to quickly stop a vehicle", however this permits all vehicles to be described as having brakes. Any car could be driven into a sturdy barrier to stop it, but to therefore say the car has brakes seems absurd.

This type of fallacy is often used in conjunction with one of the fallacies of definition.[citation needed] It is an informal fallacy.[2]

[edit]Usage

The Scottish logician Alexander Bain discussed the fallacy of suppressed correlative, which he also called the fallacy of suppressed relative, in the 19th century. He provided many example relative pairs where the correlative terms find their meaning through contrast: rest-toil, knowledge-ignorance, silence-speech, and so on.[5] Bain classified this type of error as a fallacy of relativity, which in turn was one of many fallacies of confusion.[6]

J. Loewenberg rejected a certain definition of empirical method – one that seemed so broad as to encompass all possible methods – as committing the fallacy of suppressed correlative.[7][8] This error has been said to be found in the philosophy of some empiricists, including Edgar S. Brightman, sometimes in broadening the meaning of other terms relevant to these arguments, such as "perception" (when taken to include entirely cognitive processes in addition to ones usually classified as perceptual).[9]

Critics identify the fallacy in arguments for psychological egoism, which proposes that all actions conducted by individuals are motivated by their own self-interest. Outside of this idea it is believed that sometimes people do things selflessly, such as acts of charitable giving or self-sacrifice. Psychological egoism explains all scenarios entirely in terms of selfish motivations (e.g., that acting for one's own purposes is an act of self-interest), however critics charge that in doing so they are redefining selfishness to the point where it encompasses all motivated actions and thus makes the term meaningless.[1]

[edit]See also

- Correlative-based fallacies

[edit]References

Notes

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Equivocation

From Wikipedia, the free encyclopedia

Equivocation ("to call by the same name") is classified as both a formal and informal logical fallacy. It is the misleading use of a term with more than one meaning or sense (by glossing over which meaning is intended at a particular time). It generally occurs with polysemic words (words with multiple meanings).

It is often confused with amphibology (amphiboly) (ambiguous sentences.); however, equivocation is ambiguity arising from the misleading use of a word and amphiboly is ambiguity arising from the misleading use of punctuation or syntax.

Contents

[hide]

1 Examples
  - 1.1 Puns
  - 1.2 Fallacious reasoning
  - 1.3 Semantic shift
  - 1.4 Metaphor
  - 1.5 Switch-Referencing
    - 1.5.1 "Better than nothing"
  - 1.6 Politician's syllogism

2 Specific types of equivocation fallacies

3 See also

4 References

5 External links

Examples

[edit]Puns

This form of word play relies upon two different words that sound alike. However, their different senses become obvious only upon a moment's reflection. One example is the contrast between *birth*and *death*, and *birth* and *berth*, and *told* and *toll'd* in Thomas Hood's account of the death of Ben the sailor (which took place at the age of 40, contrasted with his age of zero at birth) in his humorous poem Faithless Sally Brown:

> His death, which happen'd in his berth,
>
> At forty-odd befell:
>
> They went and told the sexton, and
>
> The sexton toll'd the bell.

Fallacious reasoning

Equivocation is the use in a syllogism (a logical chain of reasoning) of a term several times, but giving the term a different meaning each time. For example:

> A feather is light.
>
> What is light cannot be dark.
>
> Therefore, a feather cannot be dark.
>
>> In this use of equivocation, the word "light" is first used as the opposite of "heavy", but then used as a synonym of "bright" (the fallacy usually becomes obvious as soon as one tries to translate this argument into another language). Because the "middle term" of this syllogism is not one term, but two separate ones masquerading as one (all feathers are indeed "not heavy", but it is not true that all feathers are "bright"), this type of equivocation is actually an example of the fallacy of four terms.

Semantic shift

The fallacy of equivocation is often used with words that have a strong emotional content and many meanings. These meanings often coincide within proper context, but the fallacious arguer does a semantic shift, slowly changing the context by treating, as equivalent, distinct meanings of the term.

In English language, one equivocation is with the word "man", which can mean both "member of the species, *Homo sapiens*," and "*male* member of the species, *Homo sapiens*." The following sentence is a well-known equivocation:

> "Do women need to worry about man-eating sharks?", in which "man-eating" is construed to mean a shark that devours only male human beings.

Metaphor

A separate case of equivocation is metaphor:

> All jackasses have long ears.
>
> Carl is a jackass.
>
> Therefore, Carl has long ears.
>
>> Here the equivocation is the metaphorical use of "jackass" to imply a stupid or obnoxious person instead of a male donkey.

Switch-Referencing

This occurs where the referent of a word or expression in a second sentence is different from that in the immediately preceding sentence, especially where a change in referent has not been clearly identified.

The following fallacy is an example of amphiboly, and its success relies upon syntactical omissions that obscure an unparallel structure and that result in apparent ambiguity:

"Better than nothing"

Margarine is better than nothing.

Nothing is better than butter.

Therefore, margarine is better than butter.

The fallacy is exposed when the omissions are supplied. Note that, in the first part of the second premise, the present-tense verb, "putting," has been changed to the infinitive, "to put."

[Putting] margarine [on bread] is better than [putting] nothing [on bread].

[However, there is] nothing [to put on bread that] is better than [putting] butter [on bread].

Then note how the meaning would change if the second premise were parallel to the rest of the syllogism:

[Putting] margarine [on bread] is better than [putting] nothing [on bread].

[Putting] nothing [on bread] is better than [putting] butter [on bread].

By supplying the parallel structure, the original conclusion becomes logical.

Therefore, [putting] margarine [on bread] is better than [putting] butter [on bread].

However, by exposing the unparallel structure in the original syllogism, the reader is now able to supply the logical conclusion:

Therefore, [putting] butter [on bread] is better than [putting] margarine [on bread].

Politician's syllogism

A similar example is the Politician's syllogism, satirized on the television show Yes Minister:

Something must be done.

This is something.

Therefore, this must be done.

Specific types of equivocation fallacies

See main articles: False attribution, Fallacy of quoting out of context, No true Scotsman, Shifting ground fallacy.

See also

Thinking portal

- Evasion (ethics)
- Fallacy of four terms
- If-by-whiskey
- Mental reservation
- Plausible deniability
- When a white horse is not a horse

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[edit]External links

- Logical Fallacy: Equivocation The Fallacy Files

Fallacy of four terms

From Wikipedia, the free encyclopedia

(Redirected from Ambiguous middle term)

The **fallacy of four terms** (Latin: *quaternio terminorum*) is the formal fallacy that occurs when a syllogism has four (or more) terms rather than the requisite three. This form of argument is thusinvalid.

Contents

[hide]

1 Explanation

2 Reducing terms

3 Classification

4 References

5 External links

Explanation

Categorical syllogisms always have three terms:

Major premise: All fish have fins.

Minor premise: All goldfish are fish.

Conclusion: All goldfish have fins.

Here, the three terms are: "goldfish", "fish", and "fins".

Using four terms invalidates the syllogism:

Major premise: All fish have fins.

Minor premise: All goldfish are fish.

Conclusion: All humans have fins.

The premises do not connect "humans" with "fins", so the reasoning is invalid. Notice that there are four terms: "fish", "fins", "goldfish" and "humans". Two premises are not enough to connect four different terms, since in order to establish connection, there must be one term common to both premises.

In everyday reasoning, the fallacy of four terms occurs most frequently by equivocation: using the same word or phrase but with a different meaning each time, creating a fourth term even though only three distinct words are used:

Major premise: Nothing is better than eternal happiness.

Minor premise: A ham sandwich is better than nothing.

Conclusion: A ham sandwich is better than eternal happiness.

The word "nothing" in the example above has two meanings, as presented: "nothing is better" means the thing being named has the highest value possible; "better than nothing" only means that the thing being described has some value. Therefore, "nothing" acts as two different words in this example, thus creating the fallacy of four terms.

Another example of equivocation, a more tricky one:

Major premise: The pen touches the paper.

Minor premise: The hand touches the pen.

Conclusion: The hand touches the paper.

This is more clear if one uses "is touching" instead of "touches". It then becomes clear that "touching the pen" is not the same as "the pen", thus creating four terms: "the hand", "touching the pen", "the pen", "touching the paper". A correct form of this statement would be:

Major premise: All that touches the pen, touches the paper.

Minor premise: The hand touches the pen.

Conclusion: The hand touches the paper.

Now the term "the pen" has been eliminated, leaving three terms. [note: this argument is now valid but nonsensical because the major premise is untrue]

The fallacy of four terms also applies to syllogisms that contain five or six terms.[1]

Reducing terms

Sometimes a syllogism that is apparently fallacious because it is stated with more than three terms can be translated into an equivalent, valid three term syllogism.[2] For example:

Major premise: No humans are immortal.

Minor premise: All Greeks are people.

Conclusion: All Greeks are mortal.

This EAE-1 syllogism apparently has five terms: "humans", "people", "immortal", "mortal", and "Greeks". However it can be rewritten as a standard form AAA-1 syllogism by first substituting the synonymous term "humans" for "people" and then by reducing the complementary term "immortal" in the first premise using the immediate inference known as obversion (that is, "No humans are immortal." is equivalent to "All humans are mortal.").[3]

Classification

The fallacy of four terms is a syllogistic fallacy. Types of syllogism to which it applies include statistical syllogism, hypothetical syllogism, and categorical syllogism, all of which must have exactly three terms. Because it applies to the argument's form, as opposed to the argument's content, it is classified as a formal fallacy.

Equivocation of the middle term is a frequently cited source of a fourth term being added to a syllogism; both of the equivocation examples above affect the middle term of the syllogism. Consequently this common error itself has been given its own name: the fallacy of the ambiguous middle.[4] An argument that commits the ambiguous middle fallacy blurs the line between formal and informal (material) fallacies, however it is usually considered an informal fallacy because the argument's form appears valid.[5]

References

Notes

1. ^ Copi & Cohen 1990, pp. 206–207.
2. ^ Copi & Cohen 1990, pp. 214–217.
3. ^ Cogan 1998, pp. 95–96.
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[edit]External links

- Atheismweb: Fallacy of four terms, atheism.about.com
- Fallacy of the Four Terms (quaternio terminorum), onegoodmove.org
- The Four Term Fallacy, fallacyfiles.org
- Ambiguous Middle Term, fallacyfiles.org

Middle term

From Wikipedia, the free encyclopedia

In logic, a **middle term** is a term that appears (as a subject or predicate of a categorical proposition)[1] in both premises but not in the conclusion of a categorical syllogism.[2] The **middle term**(in bold below) must be distributed in at least one premise but not in the conclusion. The major term and the minor terms, also called the end terms, do appear in the conclusion.

Example:

> Major premise: All **men** are mortal.
>
> Minor premise: Socrates is a **man**.
>
> Conclusion: Socrates is mortal.
>
> The middle term is bolded above.

[edit]References

1. ^ http://en.wikipedia.org/wiki/Distribution_of_terms#Quantity
2. ^ http://www.philosophypages.com/dy/m7.htm#midt

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Ecological fallacy

From Wikipedia, the free encyclopedia

An **ecological fallacy** (or **ecological *inference* fallacy**[1]) is a logical fallacy in the interpretation of statistical data where inferences about the nature of individuals are deduced from inference for the group to which those individuals belong. Ecological fallacy sometimes refers to the Fallacy of division which is not a statistical issue. We concentrate below on four common statistical ecological fallacies: confusion between ecological correlations and individual correlations, confusion between group average and total average, Simpson's paradox, and confusion between higher average and higher likelihood.

Contents

[hide]

- 1 Correlation of Groups and Individuals
  - ○ 1.1 Examples
  - ○ 1.2 Formal Problem
  - ○ 1.3 Historical Examples of the Fallacy
  - ○ 1.4 Choosing between Aggregate and Individual Inference
- 2 Group and Total Average
- 3 Simpson's Paradox
- 4 Mean and median
- 5 Legal Applications
- 6 See also
- 7 References
- 8 References

[edit]Correlation of Groups and Individuals

Ecological fallacy happens when correlation between individual variables is based upon correlation of the variables collected for the group to which those individuals belong.

[edit]Examples

Assume that at the individual level, being Protestant impacts negatively one's tendency to commit suicide but the probability that one's neighbor commits suicide increases one's tendency to become Protestant. Then, even if at the individual level there is negative correlation between suicidal tendencies and Protestantism, there can be a positive correlation at the aggregate level.

Similarly, even if at the individual level, wealth is positively correlated to tendency to vote Republican, we observe that wealthier states tend to vote Democrat. For example, in 2004, the Republican candidate, George W. Bush, won the fifteen poorest states, and the Democratic candidate, John Kerry, won 9 of the 11 wealthiest states. Yet 62% of voters with annual incomes over $200,000 voted for Bush, but only 36% of voters with annual incomes of $15,000 or less voted for Bush.[2]

[edit]Formal Problem

The correlation of aggregate quantities (or ecological correlation) is not equal to the the correlation of individual quantities. Denote X_i, Y_i two quantities at the individual level. The formula for the covariance of the aggregate quantities in groups of size N is

$$cov\left(\sum_{jN}^{(j+1)N} Y_i, \sum_{1}^{N} X_i\right) = \sum_{1}^{N} cov(Y_{jN+i}, X_i) + \sum_{i \neq l} cov(Y_{jN+l}, X_i)$$

The covariance of two aggregated variables depends not only the covariance of two variables within the same individuals but also of covariances of the variables between different individuals. In other words, correlation of aggregate variables take into account cross sectional effects which are not relevant at the individual level.

The problem for correlations entails naturally a problem for regressions on aggregate variables: the correlation fallacy is therefore an important issue for a researcher who wants to measure causal impacts. Start with a regression model where the outcome Y_i is impacted by X_i

$$\begin{aligned} Y_i &= \alpha + \beta X_i + u_i \\ cov[u_i, X_i] &= 0 \end{aligned}$$

The regression model at the aggregate level is obtained by summing the individual equations:

$$\sum_{jN}^{(j+1)N} Y_i = \alpha + \beta \sum_{jN}^{(j+1)N} X_i + \sum_{jN}^{(j+1)N} u_i$$

$$cov\left[\sum_{jN}^{(j+1)N} u_i, \sum_{jN}^{(j+1)N} X\right] \neq 0$$

Nothing prevents the regressors and the errors from being correlated at the aggregate level. Therefore, generally, running a regression on aggregate data does not estimate the same model than running a regression with individual data.

The aggregate model is correct if and only if $\forall i, cov\left[u_i, \sum_{jN}^{(j+1)N} X\right] = 0$. This means that, controlling for X_i, $\sum_{jN}^{(j+1)N} X_i$ does not determine Y_i. Going back to the religion example, the aggregate model correctly measures Protestants' tendancy to commit suicide if and only, inside each religion, one's tendency to commit suicide is not determined by the number of Protestants in one's state

[edit]Historical Examples of the Fallacy

An early example of the ecological fallacy was Émile Durkheim's 1897 study of suicide in France although this has been debated by some.[3][4] Another example is a 1950 paper by William S. Robinson that coined the term.[5] For each of the 48 states + District of Columbia in the US as of the 1930 census, he computed the illiteracy rate and the proportion of the population born outside the US. He showed that these two figures were associated with a negative correlation of −0.53 — in other words, the greater the proportion of immigrants in a state, the lower its average illiteracy. However, when individuals are considered, the correlation was +0.12 — immigrants were on average more illiterate than native citizens. Robinson showed that the negative correlation at the level of state populations was because immigrants tended to settle in states where the native population was more literate. He cautioned against deducing conclusions about individuals on the basis of population-level, or "ecological" data. In 2011, it was found that Robinson's calculations of the ecological correlations are based on the wrong state level data. The correlation of −0.53 mentioned above is in fact −0.46.[6]

[edit]Choosing between Aggregate and Individual Inference

There is nothing wrong in running regressions on aggregate data if one is interested in the aggregate model. For instance, as a governor, it is correct to run regressions between police force on crime rate at the state level if one is interested in the policy implication of a rise in police force. However, an ecological fallacy would happen if a city council deduces the impact of a increase in police force in the crime rate at the city level from the correlation at the state level.

Choosing to run aggregate or individual regressions to understand aggregate impacts on some policy depends on the following trade off: aggregate regressions lose individual level datas but individual regressions add strong modeling assumptions. Some researchers suggest that the ecological correlation gives a better picture of the outcome of public policy actions, thus they recommend the ecological correlation over the individual level correlation for this purpose (Lubinski & Humphreys, 1996). Other researchers disagree, especially when the relationships among the levels are not clearly modeled. To prevent ecological fallacy, researchers with no individual datas can model first what is occurring at the individual level, then model how the individual and group levels are related, and finally examine whether anything occurring at the group level adds to the understanding of the relationship. For instance, in evaluating the impact of state policies, it is helpful to know that policy impacts vary less among the states than do the policies themselves, suggesting that the policy differences are not well translated into results, despite high ecological correlations (Rose, 1973).

[edit]Group and Total Average

Ecological fallacy also happens when the average for a group is approximated by the average in the total population divided by the group size. Suppose one knows the number of Protestants and the suicide rate in the USA, but one does not have data linking religion and suicide at the individual level. If one is interested in the suicide rate of Protestants, it is a mistake to consider as anunbiased estimate the total suicide rate divided by the number of Protestants. This estimate implicitly assumes that the suicidal rate of the other religions is zero.

Formally, denote Y the variable of interest and $E[Y|\text{Protestant}]$ the mean of the group, we generally have:

$$E[Y|\text{Protestant}] \neq \frac{E[Y]}{P(\text{Protestant})}$$

However, the law of total expectation gives

$$E[Y] = E[Y|\text{Protestant}]P(\text{Protestant}) + E[Y|\text{Not Protestant}](1 - P(\text{Protestan}$$

This equation must be used to compute a more congent estimate. In this equation, the only things we don't know how to estimate are in blue. We know that $E[Y|\text{Not Protestant}]$, as a probability of suicide, is between 0 and 1. We can plug in this bound and our total estimate in the equation above to obtain an estimate of $E[Y|\text{ Protestant}]$.

[edit]Simpson's Paradox

A striking ecological fallacy is Simpson's paradox. Simpson's paradox refers to the fact, when comparing two populations divided in groups of different sizes, the average of some variable in the first population can be higher in every group and yet lower in the total population. Formally, when each value of Z refers to a different group and X refers to some treatment, it can happen that

$$\forall z, E[Y|Z=z, X=1] > E[Y|Z=z, X=0] \text{ while } E[Y|X=1] < E[Y|X=0]$$

When $E[Y|Z=z, X=1] - E[Y|Z=z, X=0]$ does not depend on Z, the Simpson's paradox is exactly the omitted variable bias for the regression of Y on X where the regressor X is a dummy variable and the omitted variable Z is a categorical variable defining groups for each value it takes. The application is striking because the bias is high enough that parameters have opposite opposite signs.

[edit]Mean and median

A third example of ecological fallacy is when the average of a population is assumed to have an interpretation in term of likelihood at the individual level.

For instance, if the average score of group A is larger than zero, it does not mean that a random individual of group A is more likely to have a positive score. Similarly, if a particular group of people is measured to have a lower average IQ than the general population, it is an error to conclude that a randomly selected member of the group is more likely to have a lower IQ than the average general population. Mathematically, this comes from the fact that a distribution can have a positive mean but a negative median. This property is linked to the skewness of the distribution

Consider the following numerical example:

- Group A: 80% of people got 40 points and 20% of them got 95 points. The average score is 51 points.
- Group B: 50% of people got 45 points and 50% got 55 points. The average score is 50 points.
- If we pick two people at random from A and B, there are 4 possible outcomes:
  - A - 40, B - 45 (B wins, 40% probability)
  - A - 40, B - 55 (B wins, 40% probability)
  - A - 95, B - 45 (A wins, 10% probability)
  - A - 95, B - 55 (A wins, 10% probability)
- Although Group A has a higher average score, 80% of the time a random individual of A will score lower than a random individual of B.

[edit]Legal Applications

The ecological fallacy was discussed in a court challenge to the Washington gubernatorial election, 2004 in which a number of illegal voters were identified, after the election; their votes were unknown, because the vote was by secret ballot. The challengers argued that illegal votes cast in the election would have followed the voting patterns of the precincts in which they had been cast, and thus adjustments should be made accordingly.[7] An expert witness said this approach was like trying to figure out Ichiro Suzuki's batting average by looking at the batting average of the entire Seattle Mariners team, since the illegal votes were cast by a unrepresentative sample of each precinct's voters, and might be as different from the average voter in the precinct as Ichiro was from the rest of his team.[8] The judge determined that the challengers' argument was an ecological fallacy, and rejected it.[9]

See also

Correlation Fallacy

- Spatial autocorrelation
- Complete spatial randomness
- Ecological regression

- Modifiable Areal Unit Problem
- Spatial epidemiology
- Spatial econometrics

Simpson's paradox

- Simpson's paradox
- Statistical discrimination

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Etymological fallacy

From Wikipedia, the free encyclopedia

The **etymological fallacy** is a genetic fallacy that holds, erroneously, that the present-day meaning of a word or phrase should necessarily be similar to its historical meaning. This is a linguisticmisconception.[1] An argument constitutes an etymological fallacy if it makes a claim about the present meaning of a word based exclusively on its etymology.[2] This does not, however, show that etymology is irrelevant in any way, nor does it attempt to prove such.

A variant of the etymological fallacy involves looking for the "true" meaning of words by delving into their etymologies,[3] or claiming that a word *should* be used in a particular way because it has a particular etymology. A similar concept is that of false friends.

Contents

[hide]

1 Prerequisites

2 Examples

3 Pitfalls

4 References

5 Further reading

6 External links

[edit]Prerequisites

Hounds?

An etymological fallacy becomes possible when a word has changed its meaning over time. Such changes can include a shift in scope (narrowing or widening of meanings) or of connotation (amelioration or pejoration). In some cases, meanings can also shift completely, so that the etymological meaning has no evident connection to the current meaning.[2]

For example:

- The word *hound* originally simply meant "dog" in general. This usage is now archaic or poetic only, and *hound* now almost exclusively refers to dogs bred for the chase in particular.

- The meaning of a word may change to connote higher status, as when *knight*, originally "servant" like German *Knecht*, came to mean "military knight" and subsequently "someone of high rank".
- Conversely, the word *knave* originally meant "boy" and only gradually acquired its meaning of "person of low, despicable character".
- The word *lady* derives from Old English *hlæf-dige* ("loaf-digger; kneader of bread"), and *lord* from *hlafweard* ("loaf-ward; ensurer, provider of bread"). No connection with bread is retained in the current meaning of either word.[4]

[edit]Examples

Not every change in meaning provokes an etymological fallacy; but such changes are frequently the basis of inaccurate arguments.

- From the fact that *logos* is Greek for "word", Stuart Chase concluded in his book *The Tyranny of Words*[5] that logic was mere manipulation of words.[6]
- Some dictionaries of old languages do not distinguish glosses (meanings) from etymologies, as when Old English *gebofta* is defined as "one who sits on the same rowing bench; companion". Here the only attested meaning is the second one, while the first is simply the word's etymology.[7]
- The word *gyp* for "cheat" has been described as offensive because it is probably derived from *Gypsy*.[2]
- The word *apologize* comes from the Greek word ἀπολογία (apologia) which originally only meant "a speech in defence". Later on it began to carry the sense of expressing remorse or "saying sorry" over something that one may feel regret for, *as well* as to explain or defend, in some contexts. The word began to be used eventually as only expressing regret mainly because words of remorse would often *accompany* explanations, or at least some defense or justification along with it. But some feel today that a "full apology", in keeping with the word's original etymology, should always include explanations, while others feel that an apology should only be an expression of remorse.[8][*original research?*]
- Phrases such as *to grow smaller* or *to climb down* have been criticised for being incoherent, based on the "true" meanings of *grow* and *climb*.[2]

[edit]Pitfalls

While the assumption that a word may still be used etymologically can be fallacious, the conclusion from such reasoning is not *necessarily* false. Some words can retain their meaning for many centuries, with extreme cases like *mouse*, which denoted the same animal in the Proto-Indo-European language several thousand years ago (as *mūs).[9]

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[edit]External links

- Discussion of the etymological fallacy at Language Log

Fallacy of composition

From Wikipedia, the free encyclopedia

The **fallacy of composition** arises when one infers that something is true of the *whole* from the fact that it is true of some *part* of the whole (or even of *every* proper part). For example: "This fragment of metal cannot be fractured with a hammer, therefore the machine of which it is a part cannot be fractured with a hammer." This is clearly fallacious, because many machines can be broken-apart, without any of those parts being fracturable.

This fallacy is often confused with the fallacy of hasty generalization, in which an unwarranted inference is made from a statement about a sample to a statement about the population from which it is drawn.

The fallacy of composition is the converse of the fallacy of division. The fallacy of composition is also known as the "un-ecological fallacy."

[edit]Examples

1. Human cells are invisible to the naked eye.
2. Humans are made up of human cells.
3. Therefore, humans are invisible to the naked eye.[1]

If someone stands up out of their seat at a baseball game, they can see better. Therefore, if everyone stands up they can all see better.

In voting theory, the Condorcet paradox demonstrates a fallacy of composition: Even if all voters have rational preferences, the collective choice induced by majority rule is not transitive and hence not rational. The fallacy of composition occurs if from the rationality of the individuals one infers that society can be equally rational. The principle generalizes beyond the aggregation via majority rule to any reasonable aggregation rule, demonstrating that the aggregation of individual preferences into a Social welfare function is fraught with severe difficulties (see Arrow's impossibility theorem and Social choice theory).[*citation needed*]

[edit]*Modo hoc* fallacy

The *modo hoc* (or "just this") fallacy is the informal error of assessing meaning to an existent based on the constituent properties of its material makeup while omitting the matter's arrangement.[2]For instance, metaphysical naturalism states that while matter and motion are all that comprise man, it cannot be assumed that the characteristics inherent in the elements and physical reactions that make up man ultimately and solely define man's meaning; for, a cow which is alive and well and a cow which has been chopped up into meat are the same matter but it is obvious that the *arrangement* of that matter clarifies those different situational meanings.[2]

[edit]References

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Fallacy of division

From Wikipedia, the free encyclopedia

A **fallacy of division** occurs when one reasons logically that something true of a thing must also be true of all or some of its parts.

An example:

1. A Boeing 747 can fly unaided across the ocean.

2. A Boeing 747 has jet engines.
3. Therefore, one of its jet engines can fly unaided across the ocean.

The converse of this fallacy is called fallacy of composition, which arises when one fallaciously attributes a property of some part of a thing to the thing as a whole. Both fallacies were addressed by Aristotle in *Sophistical Refutations*.

Another example:

1. Functioning brains think.
2. Functioning brains are nothing but the neurons that they are composed of.
3. If functioning brains think, then the individual neurons in them think.
4. Individual neurons do not think.
5. Functioning brains do not think. (From 3 & 4)
6. Functioning brains think and functioning brains do not think. (From 1 & 5)

Since the premises entail a contradiction (6), at least one of the premises must be false. We may diagnose the problem as located in premise 3, which quite plausibly commits the fallacy of division.

An application: Famously and controversially, in the philosophy of the Greek Anaxagoras (at least as it is discussed by the Roman atomist Lucretius), it was assumed that the atoms constituting a substance must themselves have the salient observed properties of that substance: so atoms of water would be wet, atoms of iron would be hard, atoms of wool would be soft, etc. This doctrine is called *homeomeria*, and it plainly depends on the fallacy of division.

If a system as a whole has some property that none of its constituents has (or perhaps, it has it but not as a *result* of some constituent having that property), this is sometimes called an *strongly emergent* property of the system.

[edit]See also

- Ecological fallacy

[edit]External links

- "Division". The Fallacy Files.

False dilemma

From Wikipedia, the free encyclopedia

A **false dilemma** (also called **false dichotomy**, the **either-or fallacy**, **fallacy of false choice**, **black-and/or-white thinking**, or the **fallacy of exhaustive hypotheses**) is a type of informal fallacy that involves a situation in which only two alternatives are considered, when in fact there is at least one additional option. The options may be a position that is between the two extremes (such as when there are shades of grey) or may be a completely different alternative. The opposite of this fallacy is argument to moderation.

False dilemma can arise intentionally, when fallacy is used in an attempt to force a choice (such as, in some contexts, the assertion that "if you are not with us, you are against us"). But the fallacy can also arise simply by accidental omission of additional options rather than by deliberate deception.

In the community of philosophers and scholars, many believe that "unless a distinction can be made rigorous and precise it isn't really a distinction."[1] An exception is analytic philosopher John Searle, who called it an incorrect assumption which produces false dichotomies.[2] Searle insists that "it is a condition of the adequacy of a precise theory of an indeterminate phenomenon that it should precisely characterize that phenomenon as indeterminate; and a distinction is no less a distinction for allowing for a family of related, marginal, diverging cases."[2] Similarly, when two options are presented, they are often, though not always, two extreme points on some spectrum of possibilities; this can lend credence to the larger argument by giving the impression that the options are mutually exclusive, even though they need not be.[*citation needed*] Furthermore, the options in false dichotomies are typically presented as being collectively exhaustive, in which case the fallacy can be overcome, or at least weakened, by considering other possibilities, or perhaps by considering a whole spectrum of possibilities, as in fuzzy logic.[*citation needed*]

Contents

[hide]

1 Examples
- ○ 1.1 Morton's Fork
- ○ 1.2 False choice
- ○ 1.3 Black-and-white thinking
- ○ 1.4 *Falsum in uno, falsum in omnibus*

2 See also

3 References

4 External links

[edit]Examples

[edit]Morton's Fork

Morton's Fork, a choice between two equally unpleasant options, is often a false dilemma. The phrase originates from an argument for taxing English nobles:

> "Either the nobles of this country appear wealthy, in which case they can be taxed for good; or they appear poor, in which case they are living frugally and must have immense savings, which can be taxed for good."[3]

This is a false dilemma and a catch-22, because it fails to allow for the possibility that some members of the nobility may in fact lack liquid assets as well as the possibility that those who appear poor also lack liquid assets.

[edit]False choice

The presentation of a *false choice* often reflects a deliberate attempt to eliminate the middle ground on an issue. Eldridge Cleaver used such a quotation during his 1968 presidential campaign: "You're either part of the solution or part of the problem."[4] A common argument against noise pollution laws involves a false choice. It might be argued that in New York City noise should not be regulated, because if it were, the city would drastically change in a negative way. This argument assumes that, for example, a bar must be shut down for it to not cause disturbing levels of noise after midnight. This ignores the fact that the bar could simply lower its noise levels, and/or install soundproofing structural elements to keep the noise from excessively transmitting onto others' properties, but this is also a false choice because it ignores the fact that the noise could be emanating from the patrons outside the bar.

[edit]Black-and-white thinking

See also: Splitting (psychology)

In psychology, a related phenomenon to the false dilemma is **black-and-white thinking**. Many people routinely engage in black-and-white thinking, an example of which is someone who labels other people as all good or all bad.[5]

[edit]*Falsum in uno, falsum in omnibus*

The Latin phrase *falsum in uno, falsum in omnibus* which, roughly translated, means "false in one thing, false in everything", is fallacious in so far as someone found to be wrong about one thing, is presumed to be wrong about some other thing entirely.[6] Arising in Roman courts, this principle meant that if a witness was proved false in some parts of his testimony, any further statements were also regarded as false unless they were independently corroborated. *Falsus* is thus a fallacy of logic. The description that an initial false statement is a prelude to the making of more false statements is false; however, even one false premise will suffice to disprove an argument. This is a special case of the associatory fallacy.

Falsum in uno, falsum in omnibus status as a fallacy is independent of whether it is wise or unwise to use as a legal rule, with witnesses testifying in courts being held for perjury if part of their statements are false.

[edit]See also

Thinking portal

- Bivalence

- Correlative-based fallacies
- Degrees of truth
- Half-truth
- Hobson's choice
- Law of excluded middle
- Loaded question
- Love–hate relationship
- Multi-valued logic
- Nolan chart
- Nondualism
- Obscurantism
- Perspectivism
- Principle of bivalence
- Rogerian argument
- Sorites paradox
- Strange loop
- Thinking outside the box
- Two-party system
- None of the above
- One-party system
- Show election
- Unreason

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6. ^ Lynch, Jack (2008). *Deception and detection in eighteenth-century Britain.* Ashgate Publishing, Ltd. p. 73.

[edit]External links

- The Black-or-White Fallacy entry in *The Fallacy Files*
- Article in *Slate* Magazine, showing how President Barack Obama uses the false dilemma fallacy

If-by-whiskey

From Wikipedia, the free encyclopedia

In political discourse, **if-by-whiskey** is a relativist fallacy where the response to a question is contingent on the questioner's opinions and use of words with strong positive or negative connotations(e.g., *terrorist* as negative and *freedom fighter* as positive). An if-by-whiskey argument implemented through doublespeak appears to affirm both sides of an issue, and agrees with whichever side the listener supports, in effect, taking a position without taking a position.[1] A similar idiom is "all things to all people", which is often used as a negative term in politics.

[edit]Canonical example

The label *if-by-whiskey* refers to a 1952 speech by Noah S. "Soggy" Sweat, Jr., a young lawmaker from the U.S. state of Mississippi, on the subject of whether Mississippi should continue to prohibit (which it did until 1966) or finally legalize alcoholic beverages:[2][3]

My friends, I had not intended to discuss this controversial subject at this particular time. However, I want you to know that I do not shun controversy. On the contrary, I will take a stand on any issue at any time, regardless of how fraught with controversy it might be. You have asked me how I feel about whiskey. All right, here is how I feel about whiskey:

If when you say whiskey you mean the devil's brew, the poison scourge, the bloody monster, that defiles innocence, dethrones reason, destroys the home, creates misery and poverty, yea, literally takes the bread from the mouths of little children; if you mean the evil drink that topples the Christian man and woman from the pinnacle of righteous, gracious living into the bottomless pit of degradation, and despair, and shame and helplessness, and hopelessness, then certainly I am against it.

But, if when you say whiskey you mean the oil of conversation, the philosophic wine, the ale that is consumed when good fellows get together, that puts a song in their hearts and laughter on their lips, and the warm glow of contentment in their eyes; if you mean Christmas cheer; if you mean the stimulating drink that puts the spring in the old gentleman's step on a frosty, crispy morning; if you mean the drink which enables a man to magnify his joy, and his happiness, and to forget, if only for a little while, life's great tragedies, and heartaches, and sorrows; if you mean that drink, the sale of which pours into our treasuries untold millions of dollars, which are used to provide tender care for our little crippled children, our blind, our deaf, our dumb, our pitiful aged and infirm; to build highways and hospitals and schools, then certainly I am for it.

This is my stand. I will not retreat from it. I will not compromise.

The American columnist William Safire popularized the term in his column in *The New York Times*, but wrongly attributed it to Florida Governor Fuller Warren.[4] He corrected this reference in his book *Safire's Political Dictionary*, on page 337.[1]

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Wikisource has original text related to this article:

Whiskey Speech

1. ^ a b "Safire's Political Dictionary". Oxford University Press.
2. ^ "Recalling 'whiskey speech' tale". *The Clarion-Ledger*. 2008-06-29. Retrieved 2008-07-19.[dead link]
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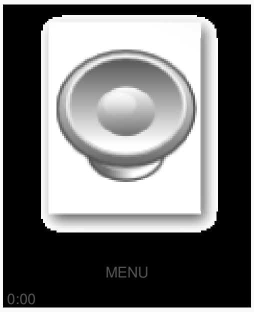
4. ^ Safire, William (1991-12-22). "ON LANGUAGE; It's a Rain Forest Out There". NY Times.

Further listening

"Whiskey Speech"



The 1952 speech by Mississippi state Rep. (and Judge) Noah S. “Soggy” Sweat, Jr., reprised by Mississippi state Rep. Ed Perry on 100th anniversary of opening of the Mississippi state Capitol, as broadcast on public radio. (Duration: 3 minutes 27 seconds)

Problems listening to this file? See media help.

Loaded question

From Wikipedia, the free encyclopedia

A **loaded question** is a question which contains a controversial or unjustified assumption (*e.g.,* a presumption of guilt).[1]

Aside from being an informal fallacy, such questions may be used as a rhetorical tool: the question attempts to limit direct replies to be those that serve the questioner's agenda.[2] The traditional example is the question "Have you stopped beating your wife?" Whether the respondent answers yes or no, he will admit to having a wife, and having beaten her at some time in the past. Thus, these facts are *presupposed* by the question, and in this case an entrapment, because it narrows the respondent to a single answer, and the fallacy of many questions has been committed.[2] The fallacy relies upon context for its effect: the fact that a question presupposes something does not in itself make the question fallacious. Only when some of these presuppositions are not necessarily agreed to by the person who is asked the question does the argument containing them become fallacious.[2] Hence the same question may be loaded in one context, but not in the other. For example the previous question would not be loaded if it was asked during a trial in which the defendant has already admitted to beating his wife.[2]

This fallacy should be distinguished from that of begging the question,[3] which offers a premise the plausibility of which depends on the truth of the proposition asked about, and which is often an implicit restatement of the proposition.[4]

The term "loaded question" is sometimes used to refer to loaded language that is phrased as a question. This type of question does not necessarily contain a fallacious presupposition, but rather this usage refers to the question having an unspoken and often emotive implication. For example, "Are you a murderer?" would be such a loaded question, as "murder" has a very negative connotation. Such a question may be asked merely to harass or upset the respondent with no intention of listening to their reply, or asked with the full expectation that the respondent will predictably deny it.

Contents

[hide]

1 Defense

2 Historical examples

3 See also

4 References

5 External links

[edit]Defense

A common way out of this argument is not to answer the question (e.g. with a simple 'yes' or 'no'), but to challenge the assumption behind the question. To use an earlier example, a good response to the question "Do you still beat your wife?" would be "I have *never* beaten my wife".[5] This removes the ambiguity of the expected response, therefore nullifying the tactic. However, the askers of said questions have learned to get around this tactic by accusing the one who answers of dodging the question. A rhetorical question such as "Then please explain, how could I possibly have beaten a wife that I've never had?" can be an effective antidote to this further tactic, placing the burden on the deceptive questioner either to expose their tactic or stop the line of inquiry. In many cases a short answer is important. *I neither did nor do I now* makes a good example on how to answer the question without letting the asker interrupt and misshape the response.

[edit]Historical examples

Madeleine Albright (U.S. Ambassador to the U.N.) claims to have answered (when she should have challenged) a loaded question on *60 Minutes* on 12 May 1996. Lesley Stahl asked, regarding the effects of UN sanctions against Iraq, "We have heard that a half million children have died. I mean, that is more children than died in Hiroshima. And, you know, is the price worth it?" Madeleine Albright: "I think that is a very hard choice, but the price, we think, the price is worth it."[6] She later wrote of this response

I must have been crazy; I should have answered the question by reframing it and pointing out the inherent flaws in the premise behind it. … As soon as I had spoken, I wished for the power to freeze time and take back those words. My reply had been a terrible mistake, hasty, clumsy, and wrong. … I had fallen into a trap and said something that I simply did not mean. That is no one’s fault but my own.[7]

President Bill Clinton, the moderator in a town meeting discussing the topic "Race In America", in response to a participant argument that the issue was not affirmative action but "racial preferences" asked the participant a loaded question: "Do you favor the United States Army abolishing the affirmative-action program that produced Colin Powell? Yes or no?" [2]

For another example, the New Zealand corporal punishment referendum, 2009 asked:

"Should a smack as part of good parental correction be a criminal offence in New Zealand?"

Murray Edridge, of Barnardos New Zealand, criticized the question as "loaded and ambiguous" and claimed "the question presupposes that smacking is a part of good parental correction".[8]

On June 13, 2012, National Basketball Association (NBA) commissioner David Stern asked radio personality Jim Rome the loaded question, "Have you stopped beating your wife yet?" in making a point about his feelings about Rome's interview.[9]

[edit]See also

- Entailment (pragmatics)
- False dilemma
- Implicature
- Suggestive question

- Leading question
- Presupposition
- Mu (negative)

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External links

- Fallacy: Loaded Questions and Complex Claims Critical Thinking exercises. San Jose State University.
- Logical Fallacy: Loaded Question The Fallacy Files

Ludic fallacy

From Wikipedia, the free encyclopedia

The **ludic fallacy** is a term coined by Nassim Nicholas Taleb in his 2007 book *The Black Swan*. "Ludic" is from the Latin *ludus*, meaning "play, game, sport, pastime."[1] It is summarized as "the misuse of games to model real-life situations."[2] Taleb explains the fallacy as "basing studies of chance on the narrow world of games and dice."[3]

It is a central argument in the book and a rebuttal of the predictive mathematical models used to predict the future – as well as an attack on the idea of applying naïve and simplified statistical models in complex domains. According to Taleb, statistics works only in some domains like casinos in which the odds are visible and defined. Taleb's argument centers on the idea that predictive models are based on platonified forms, gravitating towards mathematical purity and failing to take some key ideas into account:

- It is impossible to be in possession of *all* the information.
- Very small unknown variations in the data could have a huge impact. Taleb does differentiate his idea from that of mathematical notions in chaos theory, e.g. the butterfly effect.

- Theories/Models based on empirical data are flawed, as events that have not taken place before for which no conclusive explanation or account can be provided.

Contents

1 Examples
  - 1.1 Example 1: Suspicious coin
  - 1.2 Example 2: Job interview
  - 1.3 Example 3: Stock returns
2 Relation to Platonicity
3 See also
4 References
5 Further reading

[edit]Examples

[edit]Example 1: Suspicious coin

One example given in the book is the following thought experiment. There are two people:

- Dr John, who is regarded as a man of science and logical thinking.
- Fat Tony, who is regarded as a man who lives by his wits.

A third party asks them, "assume a *fair* coin is flipped 99 times, and each time it comes up heads. What are the odds that the 100th flip would also come up heads?"

- Dr John says that the odds are not affected by the previous outcomes so the odds must still be 50:50.
- Fat Tony says that the odds of the coin coming up heads 99 times in a row are so low (less than 1 in 6.33×10^{29}) that the initial assumption that the coin had a 50:50 chance of coming up heads is most likely incorrect.

The ludic fallacy here is to assume that in real life the rules from the purely hypothetical model (where Dr John is correct) apply. Would a reasonable person bet on black on a roulette table that has come up red 99 times in a row (especially as the reward for a correct guess is so low when compared with the probable odds that the game is fixed)?

In classical terms, highly statistically significant (unlikely) events should make one question one's model assumptions. In Bayesian statistics, this can be modelled by using a prior distribution for one's assumptions on the fairness of the coin, then Bayesian inference to update this distribution.

[edit]Example 2: Job interview

A man considers going to a job interview. He recently studied statistics and utility theory in college and performed well in the exams. Considering whether to take the interview, he tries to calculate the probability he will get the job versus the cost of the time spent.

This young job seeker forgets that real life has more variables than the small set he has chosen to estimate. Even with a low probability of success, a really good job may be worth the effort of going to the interview. Will he enjoy the process of the interview? Will his interview technique improve regardless of whether he gets the job or not? Even the statistics of the job business are non-linear. What other jobs could come the man's way by meeting the interviewer? Might there be a possibility of a very high pay-off in this company that he has not thought of?[*clarification needed*]

[edit]Example 3: Stock returns

Any decision theory based on a fixed universe or model of possible outcomes ignores and minimizes the impact of events which are "outside model." For instance, a simple model of daily stock market returns may include extreme moves such as Black Monday (1987) but might not model the market breakdowns following the 2011 Japanese tsunami and its consequences. A fixed model considers the "known unknowns," but ignores the "unknown unknowns."

[edit]Relation to Platonicity

The ludic fallacy is a specific case of the more general problem of Platonicity defined by Taleb as:

the focus on those pure, well-defined, and easily discernible objects like triangles, or more social notions like friendship or love, at the cost of ignoring those objects of seemingly messier and less tractable structures.

[edit]See also

- Map-territory relation
- Congruence bias
- Déformation professionnelle
- Focusing effect
- Hindsight bias
- Quasi-empiricism in mathematics
- We (novel)
- Demarcation problem
- Relevance paradox

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Categories:

- Cognitive biases
- Logical fallacies

There are known knowns

From Wikipedia, the free encyclopedia

"Known unknowns" redirects here. For the House episode, see Known Unknowns.

"**There are known knowns**" are the best known words of a statement to the press made by Donald Rumsfeld while serving as United States Secretary of Defense in February 2002.[1]

Contents

[hide]

1 Usage

2 Quoted from Persian literature

3 In popular culture

4 See also

5 References

6 External links

[edit]Usage

> [T]here are known knowns; there are things we know that we know.
> There are known unknowns; that is to say there are things that, we now know we don't know.
> But there are also unknown unknowns – there are things we do not know we don't know.

—United States Secretary of Defense, Donald Rumsfeld

The above statement was made by Rumsfeld on February 12, 2002 at a press briefing where he addressed the absence of evidence linking the government of Iraq with the supply of weapons of mass destruction to terrorist groups.[1] It was criticised as an abuse of language by, among others, the Plain English Campaign.[2] However, linguist Geoffrey Pullum disagreed, saying the quotation was "completely straightforward" and "impeccable, syntactically, semantically, logically, and rhetorically."[3]

As for the substance of his statement, Rumsfeld's defenders have included Canadian columnist Mark Steyn, who called it "in fact a brilliant distillation of quite a complex matter",[2] and Australian economist and blogger John Quiggin, who wrote, "Although the language may be tortured, the basic point is both valid and important ... Having defended Rumsfeld, I'd point out that the considerations he refers to provide the case for being very cautious in going to war."[4]

Italian economists Salvatore Modica and Aldo Rustichini provide an introduction to the economic literature on awareness and unawareness:

> A subject is certain of something when he knows that thing; he is uncertain when he does not know it, but he knows he does not: he is consciously uncertain. On the other hand, he is unaware of something when he does not know it, and he *does not know he does not know* [emphasis added], and so on ad infinitum: he does not perceive, does not have in mind, the object of knowledge. The opposite of unawareness is awareness.[5]

Psychoanalytic philosopher Slavoj Žižek extrapolates from these three categories a fourth, the unknown known, that which we intentionally refuse to acknowledge that we know:[6]

> If Rumsfeld thinks that the main dangers in the confrontation with Iraq were the "unknown unknowns," that is, the threats from Saddam whose nature we cannot even suspect, then the Abu Ghraib scandal shows that the main dangers lie in the "unknown knowns" – the disavowed beliefs, suppositions and obscene practices we pretend not to know about, even though they form the background of our public values.

Žižek also builds the ideas of known unknowns, and unknown knowns, into a lecture on The Reality of the Virtual and a lecture on Architecture and aestetics.

The term unknown unknowns was in use within the United States aerospace and military communities long before Rumsfeld's quote to the press in 2002. As early as 1969, Fortune magazine ran an article highlighting 'Unk-Unk' as an abbreviation used at Lockheed for 'unknown unknown'.[7] An earlier use of the term in a military context comes from a 1984 paper about warfare:

> To those things Clausewitz wrote about uncertainty and chance, I would add a few comments on unknown unknowns – those things that a commander doesn't even know he doesn't know. Participants in a war game would describe an unknown unknown as unfair, beyond the ground rules of the game. But real war does not follow ground rules, and I would urge that games be "unfair" by introducing unknown unknowns.[8]

Around the same time, libertarian lawyer Richard Epstein wrote a well known article in the *University of Chicago Law Review* about the American labour law doctrine of employment at will (the idea that workers can be fired without warning or reason, unless their contract states otherwise). In giving some of his reasons in defense of the contract at will, he wrote this:

> The contract at will is also a sensible private adaptation to the problem of imperfect information over time. In sharp contrast to the purchase of standard goods, an inspection of the job before acceptance is far less likely to guarantee its quality thereafter. The future is not clearly known. More important, employees, like employers, know what they *do not*know. They are not faced with a bolt from the blue, with an "unknown unknown." Rather they face a known unknown for which they can plan. The at-will contract is an essential part of that planning because it allows both sides to take a wait-and-see attitude to their relationship so that new and more accurate choices can be made on the strength of improved information.[9]

The expression was used more recently, in 2005, in the context of risk and reliability:

> NASA space exploration should largely address a problem class in reliability and risk management stemming primarily from human error, system risk and multi-objective trade-off analysis, by conducting research into system complexity, risk characterization and modeling, and system reasoning. In general, in every mission we can distinguish risk in three possible ways: a) known-known, b) known-unknown, and c) unknown-unknown. It is probable, almost certain, that space exploration will partially experience similar known or unknown risks embedded in the Apollo missions, Shuttle or Station unless something alters how NASA will perceive and manage safety and reliability.[10]

In his 2007 book the The Black Swan: The Impact of the Highly Improbable, Nassim Nicholas Taleb tells of a presentation on uncertainty he was requested to give to the United States Department of Defense shortly before Rumsfeld's speech. The core message of the Black Swan is that unknown unknowns are responsible for the greatest societal change.

Rumsfeld used the quote in the title of his autobiography *Known and Unknown: A Memoir*.

In a 2010 *Washington Times* interview, Admiral James A. Winnefeld, Jr., commander of the United States Northern Command, said that he was most worried about "the unknown unknowns."[11]

[edit]Quoted from Persian literature

A thirteenth-century Persian poet, Ibn Yamin[12] (ابن یمین فریومدی), said there are four types of men:[13]

- One who knows and knows that he knows... His horse of wisdom will reach the skies.
- One who knows, but doesn't know that he knows... He is fast asleep, so you should wake him up!
- One who doesn't know, but knows that he doesn't know... His limping mule will eventually get him home.
- One who doesn't know and doesn't know that he doesn't know... He will be eternally lost in his hopeless oblivion!

[edit]In popular culture

Since Rumsfeld's speech, the full quote and the terms "known knowns" and "unknown unknowns" have appeared in popular culture:

- The title of *The Unknown Knowns: A Novel* by Jeffrey Rotter is an allusion to the quote, and the full quote appears in the book's inscription
- The quote is featured in the CD recording, *The Poetry of Donald Rumsfeld and Other Fresh American Art Songs*[14]
- Hart Seely's compilation of quotes by Rumsfeld is entitled *Pieces of Intelligence: The Existential Poetry of Donald H. Rumsfeld* (2003)
- In *The Boondocks* animated series, the character Gin Rummy, a representation of Donald Rumsfeld, makes several references to unknown unknowns
- The band No Use for a Name used the entire aforementioned quote in their song Fields of Agony (Acoustic) on the record *Rock Against Bush, Vol. 2*

- In "Lil' George and Lil' Tony Blair", an episode of *Lil' Bush*, Lil' Rummy makes a reference to the unknown unknowns
- The Joan Jett song "Riddles" features the full unknown unknowns quote
- Belgian director Johan Grimonprez ends his film essay *Double Take* with the quote
- Theoretical physicist Lawrence Krauss uses the quote as opening to the second chapter of his book A Universe from Nothing

[edit]See also

- Dunning-Kruger effect
- I know that I know nothing
- Ignoramus et ignorabimus
- Ignotum per ignotius
- Johari window
- List of political catch phrases
- Ludic fallacy
- Outside Context Problem
- Relevance paradox
- Unknown known

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13. ^ fa:ابن یمین

14. ^ "The Poetry of Donald Rumsfeld". *stuffedpenguin.com*. Retrieved 12 April 2012.

[edit]External links

- Transcript of Defense Department Briefing, February 12, 2002
- Video of "Unknown unknown" talk on YouTube
- The Anosognosic’s Dilemma: Something’s Wrong but You’ll Never Know What It Is
- Unk-unk at the Double-Tongued Dictionary

Fallacy of the single cause

From Wikipedia, the free encyclopedia

The **fallacy of the single cause**, also known as **complex cause**, **causal oversimplification**, **causal reductionism**, and **reduction fallacy**,[1] is a fallacy of questionable cause that occurs when it is assumed that there is a single, simple cause of an outcome when in reality it may have been caused by a number of only jointly sufficient causes.

It can be logically reduced to: X occurred after Y. Therefore, Y caused X (although A,B,C...etc also caused X.)[1]

Often after a tragedy it is asked, "What was *the* cause of this?" Such language implies that there is one cause, when instead there were probably a large number of contributing factors. However, having produced a list of several contributing factors, it may be worthwhile to look for the strongest of the factors, or a single cause underlying several of them. A need for simplification may be perceived in order to make the explanation of the tragedy operational, so that responsible authorities can be seen to have taken action.

For instance, after a school shooting, editorialists debate whether it was caused by the shooter's parents, violence in media, stress on students, or the accessibility of guns. In fact, many different causes—including some of those—may all have necessarily contributed. Similarly, the music industry might claim that peer-to-peer file sharing is the cause of a loss in profit whereas factors such as a growing videogame market and economic depression are also likely to be major factors.

Causal oversimplification is a specific kind of false dilemma where conjoint possibilities are ignored. In other words, the possible causes are assumed to be "A or B or C" when "A and B and C" or "A and B and not C" (etc.) are not taken into consideration.

A notable scientific example of what can happen when this kind of fallacy is identified and resolved is the development in economics of the Coase theorem.

[edit]See also

- Spurious relationship

[edit]References

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False attribution

From Wikipedia, the free encyclopedia

The fallacy of a **false attribution** occurs when an advocate appeals to an irrelevant, unqualified, unidentified, biased or fabricated source in support of an argument. A contextomy is a type of false attribution.

A more deceptive and difficult to detect version of a false attribution is where a fraudulent advocate goes so far as to fabricate a source, such as creating a fake website, in order to support a claim. For example, the “Levitt Institute” was a fake organisation created in 2009 solely for the purposes of (successfully) fooling the Australian media into reporting that Sydney was Australia’s most naive city.[1]

A particular case of misattribution is the Matthew effect: a quotation is often attributed to someone more famous than the real author. This leads the quotation to be more famous, but the real author to be forgotten (see also: obliteration by incorporation).[2]

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2. ^ Mermin, N. David (2004). "Could Feynman Have Said This?". *Physics Today* **57**: 10. doi:10.1063/1.1768652.

[edit]External links

- Quoting Out of Context Fallacy Files.
- Humbug! The skeptic’s field guide to spotting fallacies in thinking – textbook on fallacies. False Attribution (p56).

Fallacy of quoting out of context

From Wikipedia, the free encyclopedia

The practice of **quoting out of context**, sometimes referred to as "**contextomy**" or "**quote mining**", is a logical fallacy and a type of false attribution in which a passage is removed from its surrounding matter in such a way as to distort its intended meaning.[1]

Arguments based on this fallacy typically take two forms. As a straw man argument, which is frequently found in politics, it involves quoting an opponent out of context in order to misrepresent their position (typically to make it seem more simplistic or extreme) in order to make it easier to refute. As an appeal to authority, it involves quoting an authority on the subject out of context, in order to misrepresent that authority as supporting some position.[2]

Contents

[hide]

1 Contextomy
  - 1.1 In advertising

2 Quote mining and the creation-evolution controversy
  - 2.1 "Absurd in the highest degree"

3 Other out of context quotations

4 See also

5 Notes

6 Further reading

7 External links

[edit]Contextomy

Contextomy refers to the selective excerpting of words from their original linguistic context in a way that distorts the source’s intended meaning, a practice commonly referred to as "quoting out of context". The problem here is not the removal of a quote from its original context (as all quotes are) *per se*, but to the quoter's decision to exclude from the excerpt certain nearby phrases or sentences (which become "context" by virtue of the exclusion) that serve to clarify the intentions behind the selected words. Comparing this practice to surgical excision, journalist Milton Mayercoined the term "contextomy" to describe its use by Julius Streicher, editor of the infamous Nazi broadsheet *Der Stürmer* in Weimar-era Germany. To arouse anti-semitic sentiments among the weekly’s working class Christian readership, Streicher regularly published truncated quotations from Talmudic texts that, in their shortened form, appear to advocate greed, slavery, and ritualistic murder.[3] Although rarely employed to this malicious extreme, contextomy is a common method of misrepresentation in contemporary mass media, and studies have demonstrated that the effects of this misrepresentation can linger even after the audience is exposed to the original, in context, quote.[4][5][6]

[edit]In advertising

One of the most familiar examples of contextomy is the ubiquitous “review blurb” in advertising. The lure of media exposure associated with being “blurbed” by a major studio may encourage some critics to write positive reviews of mediocre movies. However, even when a review is negative overall, studios have few reservations about excerpting it in a way that misrepresents the critic’s opinion. For example, the ad copy for New Line Cinema’s 1995 thriller *Se7en* attributed to Owen Gleiberman, a critic for *Entertainment Weekly*, used the comment “a small masterpiece.” Gleiberman actually gave *Se7en* a B− overall and only praised the opening credits so grandiosely: “The credit sequence, with its jumpy frames and near-subliminal flashes of psychoparaphernalia, is a small masterpiece of dementia.” Similarly, United Artists contextomized critic Kenneth Turan’s review of their flop *Hoodlum*, including just one word from it — “irresistible” — in the film’s ad copy: “Even Laurence Fishburne’s incendiary performance can’t ignite Hoodlum, a would-be gangster epic that generates less heat than a nickel cigar. Fishburne’s ‘Bumpy’ is fierce, magnetic, irresistible even… But even this actor can only do so much.” As a result of these abuses, some critics now deliberately avoid colorful language in their reviews.[7]

The European Union's Unfair Commercial Practices Directive prohibits contextomy, and targets companies who "falsely claim accreditation" for their products in ways that are "not being true to the terms of the [original] endorsement". It will be enforced in the United Kingdom by the Office of Fair Trading, and carries a maximum penalty there of a £5,000 fine or two years imprisonment.[8][9]

[edit]Quote mining and the creation-evolution controversy

Scientists and their supporters used the term *quote mining* as early as the mid-1990s in newsgroup posts to describe quoting practices of certain creationists.[10][11][12] It is used by members of the scientific community to describe a method employed by creationists to support their arguments,[13][14] [15] though it can be and often is used outside of the creation-evolution controversy. Complaints about the practice predate known use of the term: Theodosius Dobzhansky wrote in his famous 1973 essay "Nothing in Biology Makes Sense Except in the Light of Evolution" that

> Their [Creationists'] favorite sport is stringing together quotations, carefully and sometimes expertly taken out of context, to show that nothing is really established or agreed upon among evolutionists. Some of my colleagues and myself have been amused and amazed to read ourselves quoted in a way showing that we are really antievolutionists under the skin.

This has been compared to the Christian theological method of prooftexting:

> Pseudoscientists often reveal themselves by their handling of the scientific literature. Their idea of doing scientific research is simply to read scientific periodicals and monographs. They focus on words, not on the underlying facts and reasoning. They take science to be *all statements by scientists*. Science degenerates into a secular substitute for sacred literature. Any statement by any scientist can be cited against any other statement. Every statement counts and every statement is open to interpretation.
> —Radner and Radner, *Science and Unreason*, ISBN 0-534-01153-5

The Institute for Creation Research (ICR) described the use of "[a]n evolutionist's quote mistakenly used out of context" to "negate the entirety of [an] article and creationist claims regarding the lack of transitional forms" as "a smoke screen".[16]

Both Answers in Genesis (AiG) and Henry M. Morris (founder of ICR) have been accused of producing books of mined quotes. *TalkOrigins Archive* (TOA) states that "entire books of these quotes have been published" and lists prominent creationist Henry M. Morris' *That Their Words May Be Used Against Them* and *The Revised Quote Book* as examples, in addition to a number of online creationist lists of quote-mines.[17] Both AiG and ICR use the following quote from Stephen Jay Gould on intermediate forms.[18]

> The fossil record with its abrupt transitions offers no support for gradual change. All paleontologists know that the fossil record contains precious little in the way of intermediate forms; transitions between major groups are characteristically abrupt.
>
> — *Stephen Jay Gould*[18][19]

[*non-primary source needed*]

Context shows that Gould rejected the gradualists' explanation for the lack of support for gradual change in favor of his own interpretation. He continues:

... Gradualists usually extract themselves from this dilemma by invoking the extreme imperfection of the fossil record. Although I reject this argument (for reasons discussed in ["The Episodic Nature of Evolutionary Change"]), let us grant the traditional escape and ask a different question.[19]

Knowing that creationists are quoting him as if he were saying there were no transitional forms, Gould responded:

Since we proposed punctuated equilibria to explain trends, it is infuriating to be quoted again and again by creationists -- whether through design or stupidity, I do not know -- as admitting that the fossil record includes no transitional forms. The punctuations occur at the level of species; directional trends (on the staircase model) are rife at the higher level of transitions within major groups.[20]

[edit]"Absurd in the highest degree"

Since the mid-1990s, scientists and their supporters have used the term *quote mining* to describe versions of this practice as used by certain creationists in the creation-evolution controversy.[10]An example found in debates over evolution is an out-of-context quotation of Charles Darwin in his *Origin of Species*:

To suppose that the eye with all its inimitable contrivances for adjusting the focus to different distances, for admitting different amounts of light, and for the correction of spherical and chromatic aberration, could have been formed by natural selection, seems, I freely confess, absurd in the highest degree.

This sentence, sometimes truncated to the phrase "absurd in the highest degree", is often presented as part of an assertion that Darwin himself believed that natural selection could not fully account for the complexity of life.[21] However, Darwin went on to explain that the apparent absurdity of the evolution of an eye is no bar to its occurrence, and elaborates on its evolution.

The quote in context is

To suppose that the eye with all its inimitable contrivances for adjusting the focus to different distances, for admitting different amounts of light, and for the correction of spherical and chromatic aberration, could have been formed by natural selection, seems, I freely confess, absurd in the highest degree. Yet reason tells me, that if numerous gradations from a perfect and complex eye to one very imperfect and simple, each grade being useful to its possessor, can be shown to exist; if further, the eye does vary ever so slightly, and the variations be inherited, which is certainly the case; and if any variation or modification in the organ be ever useful to an animal under changing conditions of life, then the difficulty of believing that a perfect and complex eye could be formed by natural selection, though insuperable by our imagination, can hardly be considered real.
—Charles Darwin, *Origin of Species*

[edit]Other out of context quotations

Besides the creation-evolution controversy, the fallacy of quoting out of context is also used in other areas. In some instances, commentators have used the term *quote mining*, comparing the practice of others with creationist quote mining.[22]

- **Entertainment:** with *The Times* reporting its frequent abuse by promoters with, for example, "I couldn’t help feeling that, for all the energy, razzmatazz and technical wizardry, the audience had been shortchanged" being pared down to "having 'energy, razzmatazz and technical wizardry'".[23]
- **Politics:** in the 2000 United States Republican primary campaign, George W. Bush's campaign screened advertising including a "warning" from John McCain's "conservative hometown paper" that "It's time the rest of the nation learns about the McCain we know." The paper (*The Arizona Republic*), however, went on to say, "There is much there to admire. After all, we have supported McCain in his past runs for office."[24]
- **Pseudohistory:** A book review in *The New York Times* recounts Lerone Bennett Jr.'s "distortion by omission" in citing a letter from Abraham Lincoln as evidence that he "did not openly oppose the anti-immigrant Know-Nothing Party" because, as Lincoln explained, "they are mostly my old political and personal friends", while omitting to mention that the remainder of the letter describes Lincoln's break with these former Whig Party associates of his, and his anticipation of "painful necessity of my taking an open stand against them."[25]
- **Alternative medicine:** Analysis of the evidence submitted by the British Homeopathic Association to the House Of Commons Evidence Check On Homeopathy contains many examples of quote mining, where the conclusions of scientific papers were selectively quoted to make them appear to support the efficacy of homeopathic treatment. For example, one paper's conclusion was reported as "There is some evidence that homeopathic treatments are more effective than placebo" without the immediately following caveat "however, the strength of this evidence is low because of the low methodological quality of the trials. Studies of high methodological quality were more likely to be negative than the lower quality studies."[26]

[edit]See also

- Cherry picking (fallacy)
- Darwin quotation issue in Expelled
- FactCheck.org
- Prooftext
- Recontextualization
- Resignation of Shirley Sherrod
- Taliban Dan ad[27][28]

[edit]Notes

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14. ^ "The Counter-creationism Handbook", Mark Isaak, ISBN 0-520-24926-7 p 14
15. ^ Quote-Mining Comes to Ohio, Glenn Branch
16. ^ "Does Convincing Evidence For Evolution Exist?".
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18. ^ *a* *b* Stephen Jay Gould, The Panda's Thumb, 1980, p. 189 — quoted in:
    - Backer of Theory Never Contradicted Self, Truth Shows, Casey Luskin, *Evolution News & View*,Discovery Institute
    - New England Journal of Medicine Traipses Into the*Kitzmiller* Decision (Part III), Casey Luskin, *Evolution News & View*, Discovery Institute
    - Large Gaps in Creation, Genesis Park
    - *The Creation Hypothesis*, James Porter Moreland, p 278
    - False Assumption 4—Part One, John Ankerberg and John Weldon, p2
    - Creating the Missing Link: A Tale About a Whale,Duane Gish, Institute for Creation Research
    - Creationists Fight Back! A Review of *U.S. News & World Report*, Brad Harrub and Bert Thompson, Apologetics Press
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- Boller, Paul F., Jr. (1967). *Quotemanship: The Use and Abuse of Quotations for Polemical and Other Purposes*. Southern Methodist University Press. ISBN 978-1-161-40918-5.

[edit]External links

- Noises off: Bloggers fight against 'contextomy', The Guardian Theatre Blog, guardian.co.uk

Argument to moderation

From Wikipedia, the free encyclopedia

Argument to moderation (Latin: *argumentum ad temperantiam*; also known as [argument from] **middle ground**, **false compromise**, **gray fallacy** and the **golden mean fallacy**)[1] is aninformal fallacy which asserts that the truth can be found as a compromise between two opposite positions. This fallacy's opposite is the false dilemma.

As Vladimir Bukovsky puts it, the middle ground between the Big Lie of Soviet propaganda and the truth is a lie, and one should not be looking for a middle ground between disinformation andinformation.[2] According to him, people from the Western pluralistic civilization are more prone to this fallacy because they are used to resolving problems by making compromises and accepting alternative interpretations, unlike Russians who are looking for the absolute truth.

An individual demonstrating this false compromise fallacy implies that the positions being considered represent extremes of a continuum of opinions, and that such extremes are *always* wrong, and the middle ground is always correct.[1] This is not always the case. Sometimes only X *or* Y is acceptable, with no middle ground possible. Additionally, the middle ground fallacy allows any position to be invalidated, even those that have been reached by previous applications of the same method; all one must do is present yet another, radically opposed position, and the middle-ground compromise will be forced closer to that position. In politics, this is part of the basis behind Overton window theory.

It is important to note that this does not mean the middle ground position is a bad strategy, or even incorrect; only that the fact that it is moderate cannot be used as evidence of its truthfulness.

Contents

[hide]

1 Examples

2 See also

3 References

4 External links

[edit]Examples

This section **needs additional**citations **for** verification.*(September 2011)*

- "Some would say that hydrogen cyanide is a delicious and necessary part of the human diet, but others claim it is a toxic and dangerous substance. The truth must therefore be somewhere in between."
- "Bob says we should buy a computer. Sue says we shouldn't. Therefore, the best solution is to compromise and buy half a computer."
- "Should array indices start at 0 or 1? My compromise of 0.5 was rejected without, I thought, proper consideration." — Stan Kelly-Bootle
- "The choice of 48 bytes as the ATM cell payload size, as a compromise between the 64 bytes proposed by parties from the United States and the 32 bytes proposed by European parties; the compromise was made for entirely political reasons, since it did not technically favor either of the parties."[3]
- "The fact that one is confronted with an individual who strongly argues that slavery is wrong and another who argues equally strongly that slavery is perfectly legitimate in no way suggests that the truth must be somewhere in the middle."[4]

[edit]See also

- Law of excluded middle
- Okrent's Law
- False balance
- Design by committee

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[edit]External links

- False Compromise at ChangingMinds.org

Gambler's fallacy

From Wikipedia, the free encyclopedia

The **Gambler's fallacy**, also known as the **Monte Carlo fallacy** (because its most famous example happened in a Monte Carlo Casino in 1913),[1][2] and also referred to as the **fallacy of the maturity of chances**, is the belief that if deviations from expected behaviour are observed in repeated independent trials of some random process, future deviations in the opposite direction are then more likely.

Contents

[hide]

1 An example: coin-tossing

2 Explaining why the probability is 1/2 for a fair coin

3 Other examples

4 Reverse fallacy

5 Caveats

6 Childbirth

7 Monte Carlo Casino

8 Non-examples of the fallacy

- ○ 8.1 Non-example: unknown probability of event

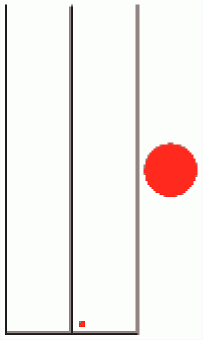
9 Psychology behind the fallacy

- ○ 9.1 Origins
- ○ 9.2 Variations of the gambler's fallacy
- ○ 9.3 Relationship to hot-hand fallacy
- ○ 9.4 Neurophysiology
- ○ 9.5 Possible solutions

10 See also

11 References

[edit]An example: coin-tossing



Simulation of coin tosses: Each frame, a coin is flipped which is red on one side and blue on the other. The result of each flip is added as a colored dot in the corresponding column. As the pie chart shows, the *proportion* of red versus blue approaches 50-50 (the Law of Large Numbers). But the *difference* between red and blue does *not* systematically decrease to zero.

The gambler's fallacy can be illustrated by considering the repeated toss of a fair coin. With a fair coin, the outcomes in different tosses are statistically independent and the probability of getting heads on a single toss is exactly $\frac{1}{2}$ (one in two). It follows that the probability of getting two heads in two tosses is $\frac{1}{4}$ (one in four) and the probability of getting three heads in three tosses is $\frac{1}{8}$ (one in eight). In general, if we let A_i be the event that toss i of a fair coin comes up heads, then we have,

$$\Pr\left(\bigcap_{i=1}^{n} A_i\right) = \prod_{i=1}^{n} \Pr(A_i) = \frac{1}{2^n}.$$

Now suppose that we have just tossed four heads in a row, so that if the next coin toss were also to come up heads, it would complete a run of five successive heads. Since the probability of a run of five successive heads is only $^1\!/_{32}$ (one in thirty-two), a believer in the gambler's fallacy might believe that this next flip is less likely to be heads than to be tails. However, this is not correct, and is a manifestation of the gambler's fallacy; the event of 5 heads in a row and the event of "first 4 heads, then a tails" are equally likely, each having probability $^1\!/_{32}$. Given the first four rolls turn up heads, the probability that the next toss is a head is in fact,

$$\Pr\left(A_5 | A_1 \cap A_2 \cap A_3 \cap A_4\right) = \Pr\left(A_5\right) = \frac{1}{2}.$$

While a run of five heads is only $^1\!/_{32}$ = 0.03125, it is only that *before* the coin is first tossed. *After* the first four tosses the results are no longer unknown, so their probabilities are 1. Reasoning that it is more likely that the next toss will be a tail than a head due to the past tosses, that a run of luck in the past somehow influences the odds in the future, is the fallacy.

[edit]Explaining why the probability is 1/2 for a fair coin

We can see from the above that, if one flips a fair coin 21 times, then the probability of 21 heads is 1 in 2,097,152. However, the probability of flipping a head *after having already flipped 20 heads in a row* is simply $^1\!/_2$. This is an application of Bayes' theorem.

This can also be seen without knowing that 20 heads have occurred for certain (without applying of Bayes' theorem). Consider the following two probabilities, assuming a fair coin:

- probability of 20 heads, then 1 tail = $0.5^{20} \times 0.5 = 0.5^{21}$
- probability of 20 heads, then 1 head = $0.5^{20} \times 0.5 = 0.5^{21}$

The probability of getting 20 heads then 1 tail, and the probability of getting 20 heads then another head are both 1 in 2,097,152. Therefore, it is equally likely to flip 21 heads as it is to flip 20 heads and then 1 tail when flipping a fair coin 21 times. Furthermore, these two probabilities are equally as likely as any other 21-flip combinations that can be obtained (there are 2,097,152 total); all 21-flip combinations will have probabilities equal to 0.5^{21}, or 1 in 2,097,152. From these observations, there is no reason to assume at any point that a change of luck is warranted based on prior trials (flips), because every outcome observed will always have been as likely as the other outcomes that were not observed for that particular trial, given a fair coin. Therefore, just as Bayes' theorem shows, the result of each trial comes down to the base probability of the fair coin: $^1\!/_2$.

[edit]Other examples

There is another way to emphasize the fallacy. As already mentioned, the fallacy is built on the notion that previous failures indicate an increased probability of success on subsequent attempts. This is, in fact, the inverse of what actually happens, even on a fair chance of a successful event, given a set number of iterations. Assume a fair 16-sided die, where a win is defined as rolling a 1. Assume a player is given 16 rolls to obtain at least one win (1−p(rolling no ones)). The low winning odds are just to make the change in probability more noticeable. The probability of having at least one win in the 16 rolls is:

$$1-\left[\frac{15}{16}\right]^{16} = 64.39\%$$

However, assume now that the first roll was a loss (93.75% chance of that, $^{15}\!/_{16}$). The player now only has 15 rolls left and, according to the fallacy, should have a higher chance of winning since one loss has occurred. His chances of having at least one win are now:

$$1-\left[\frac{15}{16}\right]^{15} = 62.02\%$$

Simply by losing one toss the player's probability of winning dropped by 2 percentage points. By the time this reaches 5 losses (11 rolls left), his probability of winning on one of the remaining rolls will have dropped to ~50%. The player's odds for at least one win in those 16 rolls has not increased given a series of losses; his odds have decreased because he has fewer iterations left to win. In other words, the previous losses in no way contribute to the odds of the remaining attempts, but there are fewer remaining attempts to gain a win, which results in a lower probability of obtaining it.

The player becomes more likely to lose in a set number of iterations as he fails to win, and eventually his probability of winning will again equal the probability of winning a single toss, when only one toss is left: 6.25% in this instance.

Some lottery players will choose the same numbers every time, or intentionally change their numbers, but both are equally likely to win any individual lottery draw. Copying the numbers that won the *previous* lottery draw gives an equal probability, although a rational gambler might attempt to predict other players' choices and then deliberately avoid these numbers. Low numbers (below 31 and especially below 12) are popular because people play birthdays as their so-called lucky numbers; hence a win in which these numbers are over-represented is more likely to result in a shared payout.

A joke told among mathematicians demonstrates the nature of the fallacy. When flying on an aircraft, a man decides to always bring a bomb with him. "The chances of an aircraft having a bomb on it are very small," he reasons, "and certainly the chances of having two are almost none!" A similar example is in the book *The World According to Garp* when the hero Garp decides to buy a house a moment after a small plane crashes into it, reasoning that the chances of another plane hitting the house have just dropped to zero.

[edit]Reverse fallacy

The reversal is also a fallacy (not to be confused with the inverse gambler's fallacy) in which a gambler may instead decide that tails are more likely out of some mystical preconception that fate has thus far allowed for consistent results of tails. Believing the odds to favor tails, the gambler sees no reason to change to heads. Again, the fallacy is the belief that the "universe" somehow carries a memory of past results which tend to favor or disfavor future outcomes.

[edit]Caveats

In most illustrations of the gambler's fallacy and the reversed gambler's fallacy, the trial (e.g. flipping a coin) is assumed to be fair. In practice, this assumption may not hold.

For example, if one flips a fair coin 21 times, then the probability of 21 heads is 1 in 2,097,152 (above). If the coin is fair, then the probability of the next flip being heads is 1/2. However, because the odds of flipping 21 heads in a row is so slim, it may well be that the coin is somehow biased towards landing on heads, or that it is being controlled by hidden magnets, or similar.[3] In this case, the smart bet is "heads" because the empirical evidence—21 "heads" in a row—suggests that the coin is likely to be biased toward "heads", contradicting the general assumption that the coin is fair.

[edit]Childbirth

Instances of the gambler’s fallacy when applied to childbirth can be traced all the way back to 1796, in Pierre-Simon Laplace’s *A Philosophical Essay on Probabilities*. Laplace wrote of the ways men calculated their probability of having sons: "I have seen men, ardently desirous of having a son, who could learn only with anxiety of the births of boys in the month when they expected to become fathers. Imagining that the ratio of these births to those of girls ought to be the same at the end of each month, they judged that the boys already born would render more probable the births next of girls." In short, the expectant fathers feared that if more sons were born in the surrounding community, then they themselves would be more likely to have a daughter.[4]

Some expectant parents believe that, after having multiple children of the same sex, they are "due" to have a child of the opposite sex. While the Trivers–Willard hypothesis predicts that birth sex is dependent on living conditions (i.e. more male children are born in "good" living conditions, while more female children are born in poorer living conditions), the probability of having a child of either gender is still regarded as 50/50.

[edit]Monte Carlo Casino

The most famous example happened in a game of roulette at the Monte Carlo Casino in the summer of 1913, when the ball fell in black 26 times in a row, an extremely uncommon occurrence (but not more nor less common than any of the other 67,108,863 sequences of 26 red or black, neglecting the 0 slot on the wheel), and gamblers lost millions of francs betting *against* black after the black streak happened. Gamblers reasoned incorrectly that the streak was causing an "imbalance" in the randomness of the wheel, and that it had to be followed by a long streak of red.[1]

[edit]Non-examples of the fallacy

There are many scenarios where the gambler's fallacy might superficially seem to apply, but actually does not. When the probability of different events is *not* independent, the probability of future events can change based on the outcome of past events (see statistical permutation). Formally, the system is said to have *memory*. An example of this is cards drawn without replacement. For example, if an ace is drawn from a deck and not reinserted, the next draw is less likely to be an ace and more likely to be of another rank. The odds for drawing another ace, assuming that it was the first card drawn and that there are no jokers, have decreased from $^4/_{52}$ (7.69%) to $^3/_{51}$ (5.88%), while the odds for each other rank have increased from $^4/_{52}$ (7.69%) to $^4/_{51}$ (7.84%). This type of effect is what allows card counting schemes to work (for example in the game of blackjack).

Meanwhile, the reversed gambler's fallacy may appear to apply in the story of Joseph Jagger, who hired clerks to record the results of roulette wheels in Monte Carlo. He discovered that one wheel favored nine numbers and won large sums of money until the casino started rebalancing the roulette wheels daily. In this situation, the observation of the wheel's behavior provided information about the physical properties of the wheel rather than its "probability" in some abstract sense, a concept which is the basis of both the gambler's fallacy and its reversal. Even a biased wheel's past results will not *affect* future results, but the results can provide *information* about what sort of results the wheel tends to produce. However, if it is known for certain that the wheel is completely fair, then past results provide no information about future ones.

The outcome of future events can be affected if external factors are allowed to change the probability of the events (e.g., changes in the rules of a game affecting a sports team's performance levels). Additionally, an inexperienced player's success may decrease after opposing teams discover his weaknesses and exploit them. The player must then attempt to compensate and randomize his strategy. (See Game theory).

Many riddles trick the reader into believing that they are an example of the gambler's fallacy, such as the Monty Hall problem.

[edit]Non-example: unknown probability of event

When the probability of repeated events are *not known*, outcomes may not be equally probable. In the case of coin tossing, as a run of heads gets longer and longer, the likelihood that the coin is biased towards heads increases. If one flips a coin 21 times in a row and obtains 21 heads, one might rationally conclude a high probability of bias towards heads, and hence conclude that future flips of this coin are also highly likely to be heads. In fact, Bayesian inference can be used to show that when the long-run proportion of different outcomes are unknown but exchangeable(meaning that the random process from which they are generated may be biased but is equally likely to be biased in any direction) previous observations demonstrate the likely direction of the bias, such that the outcome which has occurred the most in the observed data is the most likely to occur again.[5]

[edit]Psychology behind the fallacy

[edit]Origins

Gambler's fallacy arises out of a belief in the law of small numbers, or the erroneous belief that small samples must be representative of the larger population. According to the fallacy, "streaks" must eventually even out in order to be representative.[6] Amos Tversky and Daniel Kahneman first proposed that the gambler's fallacy is a cognitive bias produced by a psychological heuristiccalled the representativeness heuristic, which states that people evaluate the probability of a certain event by assessing how similar it is to events they have experienced before, and how similar the events surrounding those two processes are.[7][8] According to this view, "after observing a long run of red on the roulette wheel, for example, most people erroneously believe that black will result in a more representative sequence than the occurrence of an additional red",[9] so people expect that a short run of random outcomes should share properties of a longer run, specifically in that deviations from average should balance out. When people are asked to make up a random-looking sequence of coin tosses, they tend to make sequences where the proportion of heads to tails stays closer to 0.5 in any short segment than would be predicted by chance (insensitivity to sample size);[10] Kahneman and Tversky interpret this to mean that people believe short sequences of random events should be representative of longer ones.[11] The representativeness heuristic is also cited behind the related phenomenon of the clustering illusion, according to which people see streaks of random events as being non-random when such streaks are actually much more likely to occur in small samples than people expect.[12]

The gambler's fallacy can also be attributed to the mistaken belief that gambling (or even chance itself) is a fair process that can correct itself in the event of streaks, otherwise known as the just-world hypothesis.[13] Other researchers believe that individuals with an internal locus of control - that is, people who believe that the gambling outcomes are the result of their own skill - are more susceptible to the gambler's fallacy because they reject the idea that chance could overcome skill or talent.[14]

[edit]Variations of the gambler's fallacy

Some researchers believe that there are actually two types of gambler's fallacy: Type I and Type II. Type I is the "classic" gambler's fallacy, when individuals believe that a certain outcome is "due" after a long streak of another outcome. Type II gambler's fallacy, as defined by Gideon Keren and Charles Lewis, occurs when a gambler underestimates how many observations are needed to detect a favorable outcome (such as watching a roulette wheel for a length of time and then betting on the numbers that appear most often). Detecting a bias that will lead to a favorable outcome takes an impractically large amount of time and is very difficult, if not impossible, to do, therefore people fall prey to the Type II gambler's fallacy.[15] The two types are different in that Type I wrongly assumes that gambling conditions are fair and perfect, while Type II assumes that the conditions are biased, and that this bias can be detected after a certain amount of time.

Another variety, known as the retrospective gambler's fallacy, occurs when individuals judge that a seemingly rare event must come from a longer sequence than a more common event does. For example, people believe that an imaginary sequence of die rolls is more than three times as long when a set of three 6's is observed as opposed to when there are only two 6's. This effect can be observed in isolated instances, or even sequentially. A real world example is when a teenager becomes pregnant after having unprotected sex, people assume that she has been engaging in unprotected sex for longer than someone who has been engaging in unprotected sex and is not pregnant.[16]

[edit]Relationship to hot-hand fallacy

Another psychological perspective states that gambler's fallacy can be seen as the counterpart to basketball's Hot-hand fallacy. In the hot-hand fallacy, people tend to predict the same outcome of the last event (positive recency) - that a high scorer will continue to score. In gambler's fallacy, however, people predict the opposite outcome of the last event (negative recency) - that, for example, since the roulette wheel has landed on black the last six times, it is due to land on red the next. Ayton and Fischer have theorized that people display positive recency for the hot-hand fallacy because the fallacy deals with human performance, and that people do not believe that an inanimate object can become "hot."[17] Human performance is not perceived as "random," and people are more likely to continue streaks when they believe that the process generating the results is nonrandom.[18] Usually, when a person exhibits the gambler's fallacy, they are more likely to exhibit the hot-hand fallacy as well, suggesting that one construct is responsible for the two fallacies.[19]

The difference between the two fallacies is also represented in economic decision-making. A study by Huber, Kirchler, and Stockl (2010) examined how the hot hand and the gambler's fallacy are exhibited in the financial market. The researchers gave their participants a choice: they could either bet on the outcome of a series of coin tosses, use an "expert" opinion to sway their decision, or choose a risk-free alternative instead for a smaller financial reward. Participants turned to the "expert" opinion to make their decision 24% of the time based on their past experience of success, which exemplifies the hot-hand. If the expert was correct, 78% of the participants chose the expert's opinion again, as opposed to 57% doing so when the expert was wrong. The participants also exhibited the gambler's fallacy, with their selection of either heads or tails decreasing after noticing a streak of that outcome. This experiment helped bolster Ayton and Fischer's theory that people put more faith in human performance than they do in seemingly random processes.[20]

[edit]Neurophysiology

While the representativeness heuristic and other cognitive biases are the most commonly cited cause of the gambler's fallacy, research suggests that there may be a neurological component to it as well. Functional magnetic resonance imaging has revealed that, after losing a bet or gamble ("riskloss"), the frontoparietal network of the brain is activated, resulting in more risk-taking behavior. In contrast, there is decreased activity in the amygdala, caudate and ventral striatum after a riskloss. Activation in the amygdala is negatively correlated with gambler's fallacy - the more activity exhibited in the amygdala, the less likely an individual is to fall prey to the gambler's fallacy. These results suggest that gambler's fallacy relies more on the prefrontal cortex (responsible for executive, goal-directed processes) and less on the brain areas that control affective decision-making.

The desire to continue gambling or betting is controlled by the striatum, which supports a choice-outcome contingency learning method. The striatum processes the errors in prediction and the behavior changes accordingly. After a win, the positive behavior is reinforced and after a loss, the behavior is conditioned to be avoided. In individuals exhibiting the gambler's fallacy, this choice-outcome contingency method is impaired, and they continue to make risks after a series of losses.[21]

[edit]Possible solutions

The gambler's fallacy is a deep-seated cognitive bias and therefore very difficult to eliminate. For the most part, educating individuals about the nature of randomness has not proven effective in reducing or eliminating any manifestation of the gambler's fallacy. Participants in an early study by Beach and Swensson (1967) were shown a shuffled deck of index cards with shapes on them, and were told to guess which shape would come next in a sequence. The experimental group of participants was informed about the nature and existence of the gambler's fallacy, and were explicitly instructed not to rely on "run dependency" to make their guesses. The control group was not given this information. Even so, the response styles of the two groups were similar, indicating that the experimental group still based their choices on the length of the run sequence. Clearly, instructing individuals about randomness is not sufficient in lessening the gambler's fallacy.[22]

It does appear, however, that an individual's susceptibility to the gambler's fallacy decreases with age. Fischbein and Schnarch (1997) administered a questionnaire to five groups: students in grades 5, 7, 9, 11, and college students specializing in teaching mathematics. None of the participants had received any prior education regarding probability. The question was, "Ronni flipped a coin three times and in all cases heads came up. Ronni intends to flip the coin again.

What is the chance of getting heads the fourth time?" The results indicated that as the older the students got, the less likely they were to answer with "smaller than the chance of getting tails," which would indicate a negative recency effect. 35% of the 5th graders, 35% of the 7th graders, and 20% of the 9th graders exhibited the negative recency effect. Only 10% of the 11th graders answered this way, however, and none of the college students did. Fischbein and Schnarch therefore theorized that an individual's tendency to rely on the representativeness heuristic and other cognitive biases can be overcome with age.[23]

Another possible solution that could be seen as more proactive comes from Roney and Trick, Gestalt psychologists who suggest that the fallacy may be eliminated as a result of grouping. When a future event (ex: a coin toss) is described as part of a sequence, no matter how arbitrarily, a person will automatically consider the event as it relates to the past events, resulting in the gambler's fallacy. When a person considers every event as independent, however, the fallacy can be greatly reduced.[24]

In their experiment, Roney and Trick told participants that they were betting on either two blocks of six coin tosses, or on two blocks of seven coin tosses. The fourth, fifth, and sixth tosses all had the same outcome, either three heads or three tails. The seventh toss was grouped with either the end of one block, or the beginning of the next block. Participants exhibited the strongest gambler's fallacy when the seventh trial was part of the first block, directly after the sequence of three heads or tails. Additionally, the researchers pointed out how insidious the fallacy can be - the participants that did not show the gambler's fallacy showed less confidence in their bets and bet fewer times than the participants who picked "with" the gambler's fallacy. However, when the seventh trial was grouped with the second block (and was therefore perceived as not being part of a streak), the gambler's fallacy did not occur.

Roney and Trick argue that a solution to gambler's fallacy could be, instead of teaching individuals about the nature of randomness, training people to treat each event as if it is a beginning and not a continuation of previous events. This would prevent people from gambling when they are losing in the vain hope that their chances of winning are due to increase.

[edit]See also

- Availability heuristic
- Gambler's conceit

- Gambler's ruin
- Inverse gambler's fallacy
- Hot hand fallacy
- Law of averages
- Martingale (betting system)
- Mean reversion (finance)
- Regression toward the mean
- Statistical regularity

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Historian's fallacy

From Wikipedia, the free encyclopedia

Not to be confused with Historical fallacy.

The **historian's fallacy** is a informal fallacy that occurs when one assumes that decision makers of the past viewed events from the same perspective and having the same information as those subsequently analyzing the decision. It is not to be confused with presentism, a mode of historical analysis in which present-day ideas (such as moral standards) are projected into the past.

The fallacy was outlined in 1970 by David Hackett Fischer, who suggested it was analogous to William James's psychologist's fallacy. Fischer did not suggest that historians should refrain from retrospective analysis in their work, but he reminded historians that their subjects were not able to see into the future. As an example, he cited the well-known argument that Japan's surpriseattack on Pearl Harbor should have been predictable in the United States because of the many indications that an attack was imminent. What this argument overlooks, says Fischer, citing the work of Roberta Wohlstetter, is that there were innumerable conflicting signs which suggested possibilities other than an attack on Pearl Harbor. Only in retrospect do the warning signs seem obvious; signs which pointed in other directions tend to be forgotten. (See also: hindsight bias.)

In the field of military history, historians sometimes use what is known as the "fog of war technique" in hopes of avoiding the historian's fallacy. In this approach, the actions and decisions of the historical subject (such as a military commander) are evaluated primarily on the basis of what that person knew at the time, and not on future developments that the person could not have known. According to Fischer, this technique was pioneered by the American historian Douglas Southall Freeman in his influential biographies of Robert E. Lee and George Washington.

[edit]See also

- Cognitive bias
- Hindsight bias
- List of cognitive biases

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Presentism (literary and historical analysis)

From Wikipedia, the free encyclopedia

For other uses, see Presentism (philosophy of time).

Presentism is a mode of literary or historical analysis in which present-day ideas and perspectives are anachronistically introduced into depictions or interpretations of the past. Some modern historians seek to avoid presentism in their work because they believe it creates a distorted understanding of their subject matter.[1] The practice of *Presentism* is a common fallacy in historical writings. [2]

The *Oxford English Dictionary* gives the first citation for *presentism* in its historiographic sense from 1916, and the word may have been used in this meaning as early as the 1870s. The historianDavid Hackett Fischer identifies presentism as a fallacy also known as the "fallacy of *nunc pro tunc*". He has written that the "classic example" of presentism was the so-called "Whig history", in which certain eighteenth- and nineteenth-century British historians wrote history in a way that used the past to validate their own political beliefs. This interpretation was presentist because it did not depict the past in objective historical context, but instead viewed history only through the lens of contemporary Whig beliefs. In this kind of approach, which emphasizes the relevance of history to the present, things which do not seem relevant receive little attention, resulting in a misleading portrayal of the past. "Whig history" or "whiggishness" are often used as synonyms for*Presentism*, particularly when the historical depiction in question is teleological or triumphalist.[3]

Contents

[hide]

1 Presentism and sociological analysis

2 Presentism and moral judgments

3 See also

4 References

[edit]Presentism and sociological analysis

Presentism has a shorter history in sociological analysis, where it has been used to describe technological determinists who interpret a change in behavior as starting with the introduction of a new technology. For example, scholars such as Frances Cairncross proclaimed that the Internet had led to "the death of distance," but most community ties and many business ties had been transcontinental and even intercontinental for many years.[4]

[edit]Presentism and moral judgments

Presentism is also a factor in the problematic question of history and moral judgments. Among historians, the orthodox view may be that reading modern notions of morality into the past is to commit the error of presentism. To avoid this, some historians restrict themselves to describing what happened, and attempt to refrain from using language that passes judgment. For example, when writing history about slavery in an era when the practice was widely accepted, using language that condemns slavery as wrong or evil would be presentist, and should be avoided.

Critics respond that to avoid moral judgments is to practice moral relativism, a controversial idea. Some religious historians argue that morality is timeless, having been established by God; they say it is not anachronistic to apply timeless standards to the past. (In this view, while mores may change, morality does not.) Others argue that application of religious standards has varied over time as well. Saint Augustine, for example, holds that there exist timeless moral principles, but contends that certain practices (such as polygamy) were acceptable in the past because they were customary, while they are neither customary nor acceptable at present.[5] Others argue that historians as humans cannot truly be objective and so moral judgments will always be a part of their work. David Hackett Fischer, for his part, writes that historians cannot avoid making moral judgments and ought to make them, but that they should be aware of their biases, and write history in such a way that their biases do not create a distorted depiction of the past. [3]

[edit]See also

- Anachronism
- Chronological snobbery
- Historian's fallacy

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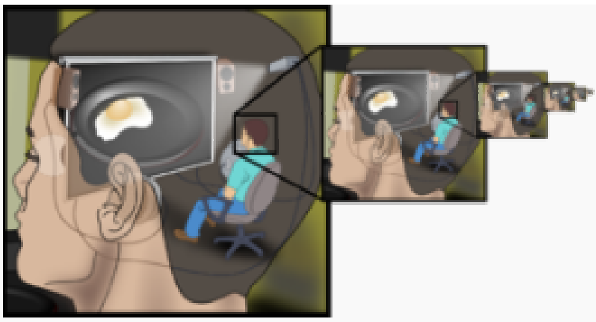
Homunculus argument

From Wikipedia, the free encyclopedia

The **homunculus argument** is a fallacy arising most commonly in the theory of vision. One may explain (human) vision by noting thatlight from the outside world forms an image on the retinas in the eyes and something (or someone) in the brain looks at these images as if they are images on a movie screen (this theory of vision is sometimes termed the theory of the Cartesian Theater: it is most associated, nowadays, with the psychologist David Marr). The question arises as to the nature of this internal viewer. The assumption here is that there is a 'little man' or 'homunculus' inside the brain 'looking at' the movie.

The reason why this is a fallacy may be understood by asking how the homunculus 'sees' the internal movie. The obvious answer is that there is another homunculus inside the first homunculus's 'head' or 'brain' looking at this 'movie'. But how does *this* homunculus see the 'outside world'? In order to answer this, we are forced to posit *another* homunculus inside this other homunculus's head and so forth. In other words, we are in a situation of infinite regress. The problem with the homunculus argument is that it tries to account for a phenomenon in terms of the very phenomenon that it is supposed to explain.



Idea of 'internal viewer'generates infinite regress of internal viewers.

Homunculus arguments in terms of rules

Another example is with cognitivist theories that argue that the human brain uses 'rules' to carry out operations (these rules often conceptualised as being like the algorithms of a computer program). For example, in his work of the '50s, '60s and '70s Noam Chomsky argued that (in the words of one of his books) human beings use *Rules and Representations* (or to be more specific, rules acting on representations) in order to cognise (more recently Chomsky has abandoned this view: c.f. the Minimalist Program).

Now, in terms of (say) chess, the players are given 'rules' (i.e. the rules of chess) to follow. So: who *uses* these rules? The answer is self-evident: the players of the game (of chess) use the rules: it's not the case (obviously) that the rules *themselves* play chess. The rules themselves are merely inert marks on paper until a *human being* reads, understands and uses them. But what about the 'rules' that are, allegedly, inside our head (brain)? Who reads, understands and uses them? Again, the implicit answer is (and, some would argue, must be) a 'homunculus': a little man who reads the rules of the world and then gives orders to the body to act on them. But again we are in a situation of infinite regress, because this implies that the homunculus has cognitive process that are also rule bound, which presupposes another homunculus inside *its* head, and so on and so forth. Therefore, so the argument goes, theories of mind that imply or state explicitly that cognition is rule bound cannot be correct unless some way is found to 'ground' the regress.

This is important because it is often assumed in cognitive science that rules and algorithms are essentially the same: in other words, the theory that cognition is rule bound is often believed to imply that thought (cognition) is essentially the manipulation of algorithms, and *this* is one of the key assumptions of some varieties of artificial intelligence.

Homunculus arguments are always fallacious unless some way can be found to 'ground' the regress. In psychology and philosophy of mind, 'homunculus arguments' (or the 'homunculus fallacies') are extremely useful for detecting where theories of mind fail or are incomplete.

The homunculus fallacy is closely related to Ryle's regress.

[edit]Counterarguments

The above cited regress argument does not necessarily invalidate all forms of the homunculus argument. The regress relies on the idea that the homunculus 'inside' the brain must itself have a homunculus inside it but it is not clear that this is a necessary condition. A dualist might argue that the homunculus inside the brain is an imaterial one (such as the cartesian soul) and thereby does not require a homunculus to have sensory experience or for an end to the regress at this point (or some later one) in another manner. The regress argument is only valid if there can be no other explanation of the homunculus's cognition supplied.

Incomplete comparison

From Wikipedia, the free encyclopedia

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An **incomplete comparison** is a misleading argument popular in advertising. For example, an advertiser might say "product X is better". This is an incomplete assertion, so it can't be refuted. A complete assertion, such as "product X sells for a lower price than product Y" or "the new product X lasts longer than the old product X" could be tested and possibly refuted.

In grammar, incomplete comparison, is a comparison that leaves out one of the item being compared. Unacceptable: *Learning Chinese is more difficult. [More difficult than what?]* Acceptable:*Learning Chinese is more difficult than learning Spanish.*[1]

[edit]References

1. ^ "Incomplete Comparisons". Retrieved 6 October 2012.

[edit]See also

- Inconsistent comparison
- Fallacy
- False advertising

Inconsistent comparison

From Wikipedia, the free encyclopedia

This article **does not cite any references or sources**. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. *(December 2008)*

An **inconsistent comparison** is a misleading argument popular in advertising. For example, an advertisement might say "product X is less expensive than product A, has better quality than product B, and has more features than product C". This is designed to give the impression that product X is better than products A, B, and C in all respects, but doesn't actually make that claim. In fact, product A may be the most expensive, product B may be the lowest quality, and product C may have the fewest features of the three. So, the original statement really only means "product X is not the most expensive, lowest quality, fewest feature product on the market". That would hardly be as effective of an advertisement, however.

[edit]See also

- Incomplete comparison
- Fallacy
- False advertising

Ignoratio elenchi

From Wikipedia, the free encyclopedia

Ignoratio elenchi, also known as **irrelevant conclusion**,[1] is the informal fallacy of presenting an argument that may or may not be logically valid, but fails nonetheless to address the issue in question.

Ignoratio elenchi falls into the broad class of relevance fallacies.[2] It is one of the fallacies identified by Aristotle in his *Organon*. In a broader sense he asserted that all fallacies are a form of *ignoratio elenchi*.[3][4]

Ignoratio Elenchi, according to Aristotle, is a fallacy which arises from “ignorance of the nature of refutation.” In order to refute an assertion, Aristotle says we must prove it's contradictory; the proof, consequently, of a proposition which stood in any other relation than that to the original, would be an *ignoratio elenchi*… Since Aristotle, the scope of the fallacy has been extended to include all cases of proving the wrong point… “I am required to prove a certain conclusion; I prove, not that, but one which is likely to be mistaken for it; in that lies the fallacy… For instance, instead of proving that ‘this person has committed an atrocious fraud,’ you prove that ‘this fraud he is accused of is atrocious;’” … The nature of the fallacy, then, consists in substituting for a certain issue another which is more or less closely related to it, and arguing the substituted issue. The fallacy does not take into account whether the arguments do or do not really support the substituted issue, it only calls attention to the fact that they do not constitute a proof of the original one… It is a particularly prevalent and subtle fallacy and it assumes a great variety of forms. But whenever it occurs and whatever form it takes, it is brought about by an assumption that leads the

person guilty of it to substitute for a definite subject of inquiry another which is in close relation with it.[5]
—Arthur Ernest Davies, *"Fallacies" in A Text-Book of Logic*

The phrase *ignoratio elenchi* is Latin meaning "ignorance of refutation". Here *elenchi* is the genitive singular of the Latin noun *elenchus*, which is from the Greek ἔλεγχος *elenchos*, meaning an argument of disproof or refutation.[6] The translation in English of the Latin expression has varied a fair bit. Hamblin proposed "misconception of refutation" or "ignorance of refutation" as a literal translation,[7] Oesterle preferred "ignoring the issue",[7] Irving Copi, Christopher Tindale and others used "irrelevant conclusion".[7][8]

An example might be a situation where A and B are debating whether the law permits A to do something. If A attempts to support his position with an argument that the law *ought* to allow him to do the thing in question, then he is guilty of *ignoratio elenchi*.[9] Dr Johnson's unique "refutation" of Bishop Berkeley's immaterialism, his claim that matter did not actually exist but only seemed to exist,[10] has been described as *Ignoratio elenchi*:[11] during a conversation with Boswell, Johnson powerfully kicked a nearby stone and proclaimed of Berkeley's theory, "I refute it *thus*!"[12]

A related concept is that of the red herring, which is a deliberate attempt to divert a process of enquiry by changing the subject.[2] Ignoratio elenchi is sometimes confused with straw manargument.[2] For example, it has been described as "attacking what the other fellow never said" by Peter Jay in an article in a 1996 article in New Statesman.[13][*verification needed*]

[edit]See also

- *Ad hominem*
- Chewbacca defense
- Enthymeme
- *Non sequitur* (logic)
- *Reductio ad Hitlerum*
- Sophism
- Red herring
- Straw man
- List of fallacies

[edit]References

1. ^ Bishop Whately, cited by John Stuart Mill: *A System of Logic*. London Colchester 1959 (first: 1843), pp. 542.
2. ^ *a b c* Patrick J. Hurley (2011). *A Concise Introduction to Logic*. Cengage Learning. p. 131-133. ISBN 978-0-8400-3417-5.
3. ^ Aristotle (1878). *The Organon, or Logical treatises, of Aristotle*. Octavius Freire Owen (translation). Covent Garden: George Bell and Sons. pp. 548–553.
4. ^ "Ignoratio Elenchi". *Introduction to Logic*. 24 September 2009.

5. ^ Davies, Arthur Ernest (1915). *A Text-Book of Logic*. R. G. Adams and company. pp. 569-576. LCCN 15027713.

6. ^ Liddell–Scott–Jones. A Greek-English Lexicon. http://archimedes.fas.harvard.edu/cgi-bin/dict?name=lsj&lang=el&word=e%29%2flegxos&filter=CUTF8.

7. ^ a b c Charles Leonard Hamblin (1970). *Fallacies*. Methuen & Co. Ltd.. p. 31.

8. ^ Christopher W. Tindale (2007). *Fallacies and Argument Appraisal*. Cambridge University Press. p. 34. ISBN 978-0-521-84208-2.

9. ^ H. W. Fowler, *A Dictionary of Modern English Usage*. Entry for *ignoratio elenchi*.

10. ^ Bate 1977, p. 316

11. ^ Bagnall, Nicholas. *Books: Paperbacks*, The Sunday Telegraph 3 March 1996

12. ^ Boswell 1986, p. 122

13. ^ Jay, Peter, *Counterfeit coin*, New Statesman, 23 August 1996

[edit]External links

Look up *red herring* in Wiktionary, the free dictionary.

- Appeal to Authority Breakdown, Examples, Definitions, & More
- Nizkor Project: Red Herring
- Fallacy Files: Red Herring
- The Phrase Finder: Red Herring
- The Art of Controversy: Diversion (bilingual with the original German) by Arthur Schopenhauer
- Red herring in political speech
- Ignoratio Elechi on TV Tropes

Kettle logic

From Wikipedia, the free encyclopedia

Kettle Logic (*la logique du chaudron* in the original French) is a type of informal fallacy wherein one uses multiple arguments to defend a point, but the arguments themselves are inconsistent.

The name derives from an example used by Sigmund Freud in *The Interpretation of Dreams*[1] and in his *Jokes and Their Relation to the Unconscious*[2]. Freud relates the story that a man who was accused by his neighbour of having returned a kettle in a damaged condition offered three arguments.

1. That he had returned the kettle undamaged;

2. That it was already damaged when he borrowed it;
3. That he had never borrowed it in the first place.

The three arguments are inconsistent, and Freud notes that it would have been better if he had only used one.

The Kettle logic of the dream-work is related to the what Freud calls the embarrassment-dream of being naked, in which contradictory opposites are yoked together in the dream.[3] Freud said that in a dream, incompatible (contradictory) ideas are simultaneously admitted.[4][5][6] Freud also presented various examples of how a symbol in a dream can bear in itself contradictory sexual meanings.[7]

[edit]See also

- Alternative pleading
- List of fallacies

[edit]References

1. ^ *The Interpretation of Dreams*, in Standard Edition of the Complete Psychological Works of Sigmund Freud, (trans. A. A. Brill), 4:119-20
2. ^ *Jokes and Their Relation to the Unconscious*, Standard Edition 13:62 and 206
3. ^ Mills, Jon (2004) *Rereading Freud: psychoanalysis through philosophy* p.14

> The peculiarities of the logic of the dream-work can be seen taking place almost from the beginning of *The Interpretation of Dreams*. [...] This "kettle logic," as Derrida calls it,[11] exemplifies the logic of the dream-work. It is likewise with that found in what Freud calls the embarrassment-dream of being naked. [...] Here, then, there is a logic that yokes contradictory opposites together in the dream.

4. ^ Kabbalah and postmodernism: a dialogue By Sanford L. Drob p.139 and notes at p.292
5. ^ Elliot R. Wolfson (2007) *Oneiric Imagination and Mystical Annihilation in Habad Hasidism* in ARC, The Journal of the Faculty of Religious Studies, McGill University 35 (2007): 131-157.
6. ^ Sigmund Freud *The Interpretation of Dreams*, translated by A. A. Brill, pp.367-373 quotation:

> Contradictory thoughts [widersprechende Gedanken] do not try to eliminate one another, but continue side by side, and often combine to form condensation- products, as though no contradiction existed. [...] The suppressed psychic material, which in the waking state has been prevented from expression and cut off from internal perception by the mutual neutralization of contradictory attitudes [durch die gegensätzliche Erledigung der Widersprüche], finds ways and means, under the sway of compromise-formations, of obtruding itself on consciousness during the night. Flectere si nequeo superos, Acheronta movebo. *(2) At any rate, the interpretation of dreams is the via regia to a knowledge of the unconscious element in out psychic life. [...] *(2) If I cannot influence the gods, I will stir up Acheron.

7. ^ Jane Marie Todd - 1990 *Autobiographics in Freud and Derrida* p.109 quotation:

> For the flower is one of the examples that Freud chooses to demonstrate the contradictory (sexual) meanings that a single dream symbol can bear. In fact, this example from The Interpretation of Dreams plays a prominent role in Derrida's article on metaphor, "La Mythologie Blanche" (1971).

[edit]External links

- Kettle Logic, Freud on Defensive Arguments: http://www.harris-greenwell.com/HGS/FreudsKettleLogic

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Mind projection fallacy

From Wikipedia, the free encyclopedia

The **mind projection fallacy** is a logical fallacy first described by physicist and Bayesian philosopher E.T. Jaynes. It occurs when someone thinks that the way they see the world reflects the way the world really is, going as far as assuming the real existence of imagined objects.[1] That is, someone's subjective judgements are "projected" to be inherent properties of an object, rather than being related to personal perception. One consequence is that others may be assumed to share the same perception, or that they are irrational or misinformed if they do not.

For example, someone might informally claim that broccoli *tastes bad*, even though "taste" depends on one's taste buds and prior experience. Alternatively, we might conclude that intelligent aliens will value the same things we do or be driven by similar motivations, even though their minds may not be constructed in the same way.

A second form of the fallacy, as described by Jaynes,[1] is when someone assumes that their own lack of knowledge about a phenomenon (which is a fact about their state of mind) as meaning that the phenomenon is not or cannot be understood (a fact about reality). (See also Map and territory.)

Jaynes used this concept to argue against Copenhagen interpretation of quantum mechanics.[2] He described the fallacy as follows:[1]

[I]n studying probability theory, it was vaguely troubling to see reference to "gaussian random variables", or "stochastic processes", or "stationary time series", or "disorder", as if the property of being gaussian, random, stochastic, stationary, or disorderly is a real property, like the property of possessing mass or length, existing in Nature. Indeed, some seek to develop statistical tests to determine the presence of these properties in their data...
Once one has grasped the idea, one sees the Mind Projection Fallacy everywhere; what we have been taught as deep wisdom, is stripped of its pretensions and seen to be instead a foolish *non sequitur*. The error occurs in two complementary forms, which we might indicate thus: (A) (My own imagination) → (Real property of Nature), [or] (B) (My own ignorance) → (Nature is indeterminate)

[edit]See also

- Psychologist's fallacy

[edit]References

1. ^ a b c E. T. JAYNES (1989). "PROBABILITY THEORY AS LOGIC" (PDF). *Ninth Annual Workshop on Maximum Entropy and Bayesian Methods*. Retrieved 2011-05-19.
2. ^ Jaynes, E. T. (1989). "Clearing up Mysteries--The Original Goal". *Maximum Entropy and Bayesian Methods*: 7.

Moving the goalposts

From Wikipedia, the free encyclopedia

This article **needs additional citations for verification**. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. *(November 2010)*

Look up *Move the goal posts* in Wiktionary, the free dictionary.

Moving the goalposts (or **shifting the goalposts**) is a metaphor meaning to change the criterion (goal) of a process or competition while still in progress, in such a way that the new goal offers one side an intentional advantage or disadvantage.[1]

Contents

[hide]

1 Etymology
2 As abuse
3 As logical fallacy
4 Feature creep
5 Other uses
6 See also
7 References

[edit]Etymology

This phrase is a straightforward derivation from sports that use goalposts, such as football. The figurative use alludes to the perceived unfairness in changing the goal one is trying to achieve after the process one is engaged in (e.g. a game of football) has already started. The phrase came into wide use in the UK during the 1980s. The first known attested use is in 1987.[1]

[edit]As abuse

Shifting the goalposts is a commonly recognized technique for destabilization in workplace bullying, often without even telling the victim. [2] [3]

For example, if an employee was told by their boss that they would be allowed to go home once a quota were filled, met the quota and prepared to go home, only to discover that their boss had increased the original quota, this could be a case of this tactic.

[edit]As logical fallacy

Moving the goalposts, also known as raising the bar, is an informal logically fallacious argument in which evidence presented in response to a specific claim is dismissed and some other (often greater) evidence is demanded. In other words, after a goal has been scored, the goalposts are moved farther to discount the attempt. This attempts to leave the impression that an argument had a fair hearing while actually reaching a preordained conclusion.[4]

[edit]Feature creep

Moving the goalposts may also refer to feature creep, in which the completion of a product like software is not acknowledged because an evolving list of required features changes over time, which may require entire remaking of the program. Thus, the goal of "completing" the product for a client may never occur.

[edit]Other uses

The term is often used in business to imply bad faith on the part of those setting goals for others to meet, by arbitrarily making additional demands just as the initial ones are about to be met.

Accusations of this form of abuse tend to occur when there are unstated assumptions that are obvious to one party but not to another. E.g., "Killing all the fleas on a cat is very easy" (with the unstated condition that "The cat still remains alive and in good health").

[edit]See also

- Bait and switch
- Nirvana fallacy
- No true Scotsman
- Setting up to fail
- Texas sharpshooter fallacy

[edit]References

1. ^ a b "Moving the goalposts". Phrases.org.uk. Retrieved 2011-12-20.
2. ^ Rayner C, Hoel H, Cooper CL Workplace Bullying: What we know, who is to blame and what can we do? (2001)
3. ^ Peyton PR Dignity at Work: Eliminate Bullying and Create a Positive Working Environment (2003)
4. ^ Humbug! The skeptic's field guide to spotting fallacies in thinking – textbook on fallacies. "Moving the goalposts" (p92).

Nirvana fallacy

From Wikipedia, the free encyclopedia

The **nirvana fallacy** is the informal fallacy of comparing actual things with unrealistic, idealized alternatives. It can also refer to the tendency to assume that there is a perfect solution to a particular problem. A closely related concept is the *perfect solution fallacy*.

Example: "If we go on the Highway 95 at four in the morning, we will get to our destination exactly on time because there will be NO traffic whatsoever."

By creating a false dichotomy that presents one option which is obviously advantageous—while at the same time being completely implausible—a person using the nirvana fallacy can attack any opposing idea because it is imperfect. The choice is not between real world solutions and utopia; it is, rather, a choice between one realistic possibility and another which is merely *better*.

Contents

[hide]

- 1 History
- 2 Perfect solution fallacy
  - ○ 2.1 Examples
- 3 See also
  - ○ 3.1 Buddhist interpretations
- 4 References
- 5 Further reading

[edit]History

The nirvana fallacy was given its name by economist Harold Demsetz in 1969,[1][2] who said:[3]

The view that now pervades much public policy economics implicitly presents the relevant choice as between an ideal norm and an existing 'imperfect' institutional arrangement. This*nirvana* approach differs considerably from a *comparative institution* approach in which the relevant choice is between alternative real institutional arrangements.

A related quotation from Voltaire is:

> *Le mieux est l'ennemi du bien*

often translated as:

> *The perfect is the enemy of the good*

though it is better rendered as:

> *Leave well alone*[4] or *Leave well enough alone*

from "La Bégueule" (1772).

[edit]Perfect solution fallacy

The **perfect solution fallacy** is an informal fallacy that occurs when an argument assumes that a perfect solution exists and/or that a solution should be rejected because some part of the problem would still exist after it were implemented. This is a classic example of black and white thinking, in which a person fails to see the complex interplay between multiple component elements of a situation or problem, and as a result, reduces complex problems to a pair of binary extremes.

It is common for arguments which commit this fallacy to omit any specifics about exactly how, or how badly, a proposed solution is claimed to fall short of acceptability, expressing the rejection in vague terms only. Alternatively, it may be combined with the fallacy of misleading vividness, when a specific example of a solution's failure is described in emotionally powerful detail but base rates are ignored (see availability heuristic).

The fallacy is a type of false dilemma.

[edit]Examples

Posit (fallacious)

These anti-drunk driving ad campaigns are not going to work. People are still going to drink and drive no matter what.

Rebuttal

Complete eradication of drunk driving is not the expected outcome. The goal is reduction.

Posit (fallacious)

Seat belts are a bad idea. People are still going to die in car crashes.

Rebuttal

While seat belts cannot make driving 100% safe, they do reduce one's likelihood of dying in a car crash.

[edit]See also

- Wishful thinking
- Nirvana

[edit]Buddhist interpretations

- Dukkha, a Buddhist notion of unease
- Wabi-sabi, a Japanese aesthetic of imperfection

[edit]References

1. ^ Leeson, Peter T. (2007-08-06). "Anarchy unbound, or: why self-governance works better than you think". *Cato Unbound*. Cato Institute. Retrieved 2009-07-01.
2. ^ Shapiro, Daniel (2007). *Is the welfare state justified?*. New York: Cambridge University Press. pp. 4. ISBN 0-521-86065-2.
3. ^ H. Demsetz, "Information and Efficiency: Another Viewpoint," Journal of Law and Economics 12 (April 1969): 1, quoted in Kirzner, Israel M. (1978). *Competition and Entrepreneurship*. p. 231. ISBN 0-226-43776-0.
4. ^ Literally: The *better* is the enemy of the *well*.

Further reading

- Browne, M Neil; Keeley, Stuart M (2004). *Asking the right questions: a guide to critical thinking* (7th. ed.). Upper Saddle River, NJ: Pearson Prentice Hall. ISBN 978-0-13-182993-0.OCLC 50813342.

Post hoc ergo propter hoc

From Wikipedia, the free encyclopedia

"Post hoc" redirects here. For the analytical technique, see Post-hoc analysis.
For the West Wing episode, see Post Hoc, Ergo Propter Hoc (The West Wing).

Post hoc ergo propter hoc, Latin for "after this, therefore because of this", is a logical fallacy (of the questionable cause variety) that states "Since that event *followed* this one, that event must have been *caused* by this one." It is often shortened to simply ***post hoc*** and is also sometimes referred to as **false cause**, **coincidental correlation**, or **correlation not causation**. It is subtly different from the fallacy *cum hoc ergo propter hoc*, in which two things or events occur simultaneously or the chronological ordering is insignificant or unknown.

Post hoc is a particularly tempting error because temporal sequence appears to be integral to causality**.** The fallacy lies in coming to a conclusion based *solely* on the order of events, rather than taking into account other factors that might rule out the connection.

Contents

[hide]

1 Pattern
2 Examples
3 See also
4 Notes
5 External links

[edit]Pattern

The form of the *post hoc fallacy* can be expressed as follows:

- **A** occurred, then **B** occurred.
- Therefore, **A** caused **B**.

When **B** is undesirable, this pattern is often extended in reverse: Avoiding **A** will prevent **B**.

[edit]Examples

From *Attacking Faulty Reasoning* by T. Edward Damer:[1]

"I can't help but think that you are the cause of this problem; we never had any problem with the furnace until you moved into the apartment." The manager of the apartment house, on no stated grounds other than the temporal priority of the new tenant's occupancy, has that the tenant's presence has some causal relationship to the furnace's becoming faulty.

From *With Good Reason* by S. Morris Engel:[2]

More and more young people are attending high schools and colleges today than ever before. Yet there is more juvenile delinquency and more alienation among the young. This makes it clear that these young people are being corrupted by their education.

One class of examples is sometimes called the "Rooster Syndrome": "believing that the rooster’s crowing causes the sun to rise".

[edit]See also

- Confirmation bias
- Third-cause fallacy
- Regression fallacy
- Superstition
- Magical thinking
- Cargo cult
- Whig history

[edit]Notes

1. ^ Damer, T Edward (1995). *Attacking Faulty Reasoning: A Practical Guide to Fallacy-Free Arguments* (3rd. ed.). Belmont, CA: Wadsworth Publishing. p. 131. ISBN 978-0-534-21750-1.OCLC 30319422.
2. ^ Engel, S Morris (1994). *With good reason: an introduction to informal fallacies* (5th. ed.). New York: St. Martin's Press. p. 165. ISBN 978-0-312-08479-0. OCLC 30478315.

[edit]External links

- Post Hoc Reasoning in the *Experiment-resources.com* by Martyn Shuttleworth
- Post hoc fallacy in the Skeptic's Dictionary by Robert T. Carroll
- Post Hoc, Ergo Propter Hoc in the *Fallacy Files* by Gary N. Curtis

- Non Causa Pro Causa in the *Fallacy Files* by Gary N. Curtis

Proof by intimidation

From Wikipedia, the free encyclopedia

(Redirected from Proof by verbosity)

Proof by intimidation (or argumentum verbosium) is a jocular phrase used mainly in mathematics to refer to a style of presenting a purported mathematical proof by giving an argument loaded with jargon and appeal to obscure results, so that the audience is simply obliged to accept it, lest they have to admit their ignorance and lack of understanding.[1] The phrase is also used when the author is an authority in his field presenting his proof to people who respect *a priori* his insistence that the proof is valid or when the author claims that his statement is true because it is trivial or because he simply says so. Usage of this phrase is for the most part in good humour, though it also appears in serious criticism.[2][3] More generally, "proof by intimidation" has also been used by critics of junk science to describe cases in which scientific evidence is thrown aside in favour of a litany of tragic individual cases presented to the public by articulate advocates who pose as experts in their field.[4]

Gian-Carlo Rota claimed in a memoir that the expression "proof by intimidation" was coined by Mark Kac to describe a technique used by William Feller in his lectures.[5]

[edit]See also

- *Ad nauseam*
- Sophism
- Gish Gallop
- Argument from authority
- Chewbacca defense
- Handwaving
- Sara Piccirilli

[edit]References

1. ^ Michael H. F. Wilkinson. "Cogno-Intellectualism, Rhetorical Logic, and the Craske-Trump Theorem". *Annals of Improbable Research* **6** (5): 15–16. Retrieved 2008-02-22.
2. ^ Tony Hey (1999). "Richard Feynman and computation". *Contemporary Physics* **40** (4): 257–265. doi:10.1080/001075199181459. Retrieved 2008-02-22.
3. ^ David L Griscom (2007-02-08). ""Hand Waving" the Physics of 9/11 (letters to the editor)". *Journal of 9/11 Studies*. Retrieved 2008-02-22.

4. ^ Marjorie K. Jeffcoat (July 2003). "Junk science: Appearances can be deceiving". *Journal of the American Dental Association* **134** (7): 802–803. PMID 12892436. Retrieved 2008-02-22.
5. ^ *He took umbrage when someone interrupted his lecturing by pointing out some glaring mistake. He became red in the face and raised his voice, often to full shouting range. It was reported that on occasion he had asked the objector to leave the classroom. The expression "proof by intimidation" was coined after Feller's lectures (by Mark Kac). During a Feller lecture, the hearer was made to feel privy to some wondrous secret, one that often vanished by magic as he walked out of the classroom at the end of the period. Like many great teachers, Feller was a bit of a con man.* Gian-Carlo Rota(1996). *Indiscrete Thoughts*. Boston: Birkhäuser. ISBN 0-8176-3866-0.

Gish Gallop

Gish has been characterized as using a rapid-fire approach during a debate, presenting arguments and changing topics very quickly. Eugenie Scott, executive director of the National Center for Science Education, has dubbed this approach the "*Gish Gallop*," describing it as "where the creationist is allowed to run on for 45 minutes or an hour, spewing forth torrents of error that the evolutionist hasn't a prayer of refuting in the format of a debate"[7] and criticized Gish for failing to answer objections raised by his opponents.[8] Since the coining of the phrase "Gish Gallop" several other religious apologists have been attributed with the use of this debating technique, notable examples being Dinesh D'Souza and William Lane Craig.[*citation needed*] The phrase has also come to be used as a pejorative to describe similar debate styles employed by proponents of other, usually fringe beliefs, such as homeopathy or the moon landing hoax.[9][10]

Argument from authority

From Wikipedia, the free encyclopedia

Argument from authority (*argumentum ad verecundiam*), also **authoritative argument** and **appeal to authority**, is an inductive-reasoning argument that often takes the form of a statistical syllogism.[1] Although certain classes of argument from authority can constitute strong inductive arguments, the appeal to authority is often applied fallaciously. Appeals to authority are always deductively fallacious; even a legitimate authority speaking on his area of expertise may affirm a falsehood, so no testimony of any authority is guaranteed to be true.

Contents

[hide]

- 1 Forms
  - ○ 1.1 Fallacious appeal to authority
- 2 See also
- 3 References

[edit]Forms

The argument from authority (*argumentum ad verecundiam*) can take several forms. As a statistical syllogism, the argument has the following basic structure: [1]

> Most of what authority A has to say on subject matter *S* is correct.
>
> A says *P* about subject matter *S*.
>
> Therefore, *P* is correct.

The strength of this authoritative argument depends upon two factors: [1][2]

1. The authority is a legitimate expert on the subject.
2. There exists consensus among legitimate experts in the subject matter under discussion.

The two factors — legitimate expertise and expert consensus — can be incorporated to the structure of the statistical syllogism, in which case, the argument from authority can be structured thus: [2]

X holds that A is true.
X is a legitimate expert on the subject matter.
The consensus of subject-matter experts agrees with X.
Therefore, there exists a presumption that A is true.

[edit]Fallacious appeal to authority

Fallacious arguments from authority often are the result of failing to meet at least one of the required two conditions (legitimate expertise and expert consensus) structurally required in the forms of a statistical syllogism.[1][2] First, when the inference fails to meet the first condition (inexpert authority), it is an *appeal to inappropriate authority*, which occurs when an inference relies upon a person or a group without relevant expertise or knowledge of the subject matter under discussion.[3]

Second, because the argument from authority is an inductive-reasoning argument — wherein is implied that the truth of the conclusion cannot be guaranteed by the truth of the premises — it also is fallacious to assert that the conclusion *must* be true.[2] Such a determinative assertion is a *logical non sequitur*, because, although the inductive argument might have merit — either probabilistic or statistical — the conclusion does not follow unconditionally, in the sense of being logically necessary.[4][5]

[edit]See also

- Credentialism
- Groupthink
- *Ipse dixit*
- Logical fallacy
- Name-dropping

- Precedent
- What would Jesus do?

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Prosecutor's fallacy

From Wikipedia, the free encyclopedia

The **prosecutor's fallacy** is a fallacy of statistical reasoning made in law. In this fallacy, the context in which the accused has been brought to court is falsely assumed to be irrelevant to judging how confident a jury can be in evidence against them with a statistical measure of doubt. If the defendant was selected from a large group merely because of the evidence under consideration, then this fact should be included in weighing how incriminating that evidence is. Not doing so is a base rate fallacy. This fallacy usually results in assuming that the prior probability that a piece of evidence would implicate a randomly chosen member of the population is equal to the probability that it would implicate the defendant.

One form of the fallacy results from misunderstanding conditional probability and neglecting the prior odds of a defendant being guilty before that evidence was introduced. When a prosecutor has collected some evidence (for instance a DNA match) and has an expert testify that the probability of finding this evidence if the accused were innocent is tiny, the fallacy occurs if it is concluded that the probability of the accused being innocent must be comparably tiny. If the DNA match is used to confirm guilt which is otherwise suspected then it is indeed strong evidence. However if the DNA evidence is the sole evidence against the accused and the accused was picked out of a large database of DNA profiles, the jurors should consider the very likely possibility that the match is just a coincidence and the accused is innocent. The odds in this scenario do not relate to the odds of being guilty, they relate to the odds of being picked at random.

The terms "prosecutor's fallacy" and "defense attorney's fallacy" were originated by William C. Thompson and Edward Schumann in the 1987 article Interpretation of Statistical Evidence in Criminal Trials, subtitled *The Prosecutor's Fallacy and the Defense Attorney's Fallacy*.[1][2]

Contents

[hide]

1 Examples of prosecutor's fallacies

○ 1.1 Conditional probability

○ 1.2 Multiple testing

2 Mathematical analysis

3 Legal impact

4 Defense attorney's fallacy

○ 4.1 Possible examples of fallacious defense arguments

5 The Sally Clark case

6 See also

7 References

8 External links

[edit]Examples of prosecutor's fallacies

[edit]Conditional probability

Argument from rarity – Consider this case: a lottery winner is accused of cheating, based on the improbability of winning. At the trial, the prosecutor calculates the (very small) probability of winning the lottery without cheating and argues that this is the chance of innocence. The logical flaw is that the prosecutor has failed to account for the large number of people who play the lottery.

Berkson's paradox - mistaking conditional probability for unconditional - led to several wrongful convictions of British mothers, accused of murdering two of their children in infancy, where the primary evidence against them was the statistical improbability of two children dying accidentally in the same household (under "Meadow's law"). Though multiple accidental (SIDS) deaths are rare, so are multiple murders; with only the facts of the deaths as evidence, it is the ratio of these (prior) improbabilities that gives the correct "posterior probability" of murder.[3]

[edit]Multiple testing

In another scenario, a crime-scene DNA sample is compared against a database of 20,000 men. A match is found, that man is accused and at his trial, it is testified that the probability that two DNA profiles match by chance is only 1 in 10,000. This does not mean the probability that the suspect is innocent is 1 in 10,000. Since 20,000 men were tested, there were 20,000 opportunities to find a match by chance.

Even if none of the men in the database left the crime-scene DNA, a match by chance to an innocent is more likely than not. The chance of getting at least one match among the records is:

$$1-\left(1-\frac{1}{10000}\right)^{20000}\approx 86\%$$

So, this evidence alone is an uncompelling data dredging result. If the culprit *was* in the database then he and one or more other men would probably be matched; in either case, it would be a fallacy to ignore the number of records searched when weighing the evidence. "Cold hits" like this on DNA databanks are now understood to require careful presentation as trial evidence.

[edit]Mathematical analysis

Finding a person innocent or guilty can be viewed in mathematical terms as a form of binary classification. If *E* is the observed evidence, and *I* stands for "accused is innocent" then consider theconditional probabilities:

- $P(E|I)$ is the probability that the "damning evidence" would be observed even when the accused is innocent (a "false positive").
- $P(I|E)$ is the probability that the accused is innocent, despite the evidence *E*.

With forensic evidence, $P(E|I)$ is tiny. The prosecutor wrongly concludes that $P(I|E)$ is comparatively tiny. (The Lucia de Berk prosecution is accused of exactly this error,[4] for example.) In fact,$P(E|I)$ and $P(I|E)$ are quite different; using Bayes' theorem:

$$P(I|E)=P(E|I)\cdot\frac{P(I)}{P(E)}$$

Where:

- $P(I)$ is the probability of innocence *independent of the test result* (i.e. from all other evidence) and
- $P(E)$ is the prior probability that the evidence would be observed (regardless of innocence):

$$P(E)=P(E|I)\cdot P(I)+P(E|\sim I)\cdot[1-P(I)]$$

  - $P(E|\sim I)$ is the probability that the evidence would identify a guilty suspect (not give a false negative). This is usually close to 100%, slightly increasing the inference of innocence over a test without false negatives. That inequality is concisely expressed in terms of odds:

$$\mathrm{Odds}(I|E)\geq\mathrm{Odds}(I)\cdot P(E|I)$$

The prosecutor is claiming a negligible chance of innocence, given the evidence, implying *Odds*(*I*|*E*) -> *P*(*I*|*E*), or that:

$$\mathrm{P}(I|E) \approx P(E|I) \cdot \mathrm{Odds}(I)$$

A prosecutor conflating *P*(*I*|*E*) with *P*(*E*|*I*) makes a technical error whenever *Odds*(*I*) >> 1. This may be a harmless error if *P*(*I*|*E*) is still negligible, but it is especially misleading otherwise (mistaking low statistical significance for high confidence).

[edit]Legal impact

In the courtroom, the prosecutor's fallacy typically happens by mistake,[5] but deliberate use of the prosecutor's fallacy is prosecutorial misconduct and can subject the prosecutor to official reprimand, disbarment or criminal punishment.

In the adversarial system, lawyers are usually free to present statistical evidence as best suits their case; retrials are more commonly the result of the prosecutor's fallacy in expert witnesstestimony or in the judge's summation.[6]

[edit]Defense attorney's fallacy

This section **needs attention from an expert in Philosophy/Logic**. Please add a *reason* or a *talk* parameter to this template to explain the issue with the section. WikiProject Philosophy/Logic may be able to help recruit an expert. *(September 2009)*

Suppose there is a one-in-a-million chance of a match given that the accused is innocent. The prosecutor says this means there is only a one-in-a-million chance of innocence. But if everyone in a community of 10 million people is tested, one expects 10 matches even if all are innocent. The defense fallacy would be to reason that "10 matches were expected, so the accused is no more likely to be guilty than any of the other matches, thus the evidence suggests a 90% chance that the accused is innocent." and "As such, this evidence is irrelevant." The first part of the reasoning would be correct only in the case where there is no further evidence pointing to the defendant. On the second part, Thompson & Schumann wrote that the evidence should still be highly relevantbecause it "drastically narrows the group of people who are or could have been suspects, while failing to exclude the defendant" (page 171).[1][7]

[edit]Possible examples of fallacious defense arguments

Some authors have cited defense arguments in the O. J. Simpson murder trial as an examples of a fallacy over the context in which the accused has been brought to court: crime scene blood matched Simpson's with characteristics shared by 1 in 400 people. The defense argued that a football stadium could be filled with Angelenos matching the sample and that the figure of 1 in 400 was useless.[8][9]

Also at the O. J. Simpson murder trial, the prosecution presented evidence that Simpson had been violent toward his wife, while the defense argued that there was only one woman murdered for every 2500 women who were subjected to spousal abuse, and that any history of Simpson being violent toward his wife was irrelevant to the trial. However some regard the reasoning behind the defense's calculation as fallacious. According to author Gerd Gigerenzer, the correct probability requires the context - that Simpson's wife had not only been subjected to domestic violence, but subjected to domestic violence *and* murdered - to be taken into account. Gigerenzer writes "the chances that a batterer actually murdered his partner, given that she has been killed, is about 8 in 9 or approximately 90%".[10]

[edit]The Sally Clark case

Sally Clark, a British woman who was accused in 1998 of having killed her first child at 11 weeks of age, then conceived another child and allegedly killed it at 8 weeks of age. The prosecution hadexpert witness Sir Roy Meadow testify that the probability of two children in the same family dying from SIDS is about 1 in 73 million. That was much less frequent than the actual rate measured in historical data - Meadow estimated it from single-SIDS death data, and the assumption that the probability of such deaths should be uncorrelated between infants. [11]

Meadow acknowledged that 1-in-73 million is not an impossibility, but argued that such accidents would happen "once every hundred years" and that, in a country of 15 million 2-child families, it is vastly more likely that the double-deaths are due to Münchausen syndrome by proxy than to such a rare accident. However, there is good reason to suppose that the likelihood of a death from SIDS in a family is significantly greater if a previous child has already died in these circumstances (a genetic predisposition to SIDS is likely to invalidate that assumed statistical independence[12]) making some families more susceptible to SIDS and the error an outcome of the ecological fallacy.[13] The likelihood of two SIDS deaths in the same family cannot be soundlyestimated by squaring the likelihood of a single such death in all otherwise similar families.[14]

1-in-73 million greatly underestimated the chance of two successive accidents, but, even if that assessment were accurate, the court seems to have missed the fact that the 1-in-73 million number meant nothing on its own. As an *a priori* probability, it should have been weighed against the *a priori* probabilities of the alternatives. Given that two deaths had occurred, one of the following explanations must be true, and all of them are *a priori* extremely improbable:

1. Two successive deaths in the same family, both by SIDS
2. Double homicide (the prosecution's case)
3. Other possibilities (including one homicide and one case of SIDS)

It's unclear that an estimate for the second possibility was ever proposed during the trial, or that the comparison of the first two probabilities was understood to be the key estimate to make in the statistical analysis assessing the prosecution's case against the case for innocence.

Mrs. Clark was convicted in 1999, resulting in a press release by the Royal Statistical Society which pointed out the mistakes.[15]

In 2002, Ray Hill (Mathematics professor at Salford) attempted to accurately compare the chances of these two possible explanations; he concluded that successive accidents are between 4.5 and 9 times more likely than are successive murders, so that the *a priori* odds of Clark's guilt were between 4.5 to 1 and 9 to 1 against.[16]

A higher court later quashed Sally Clark's conviction, on other grounds, on 29 January 2003. However, Sally Clark, a practising solicitor before the conviction, developed a number of serious psychiatric problems including serious alcohol dependency and died in 2007 from alcohol poisoning. [17]

[edit]See also

- Base rate fallacy
- Representativeness heuristic
- False positive
- False positive paradox
- Likelihood function

- Howland will forgery trial
- People v. Collins
- Conditional probability fallacy
- Lucia de Berk
- Simpson's paradox
- Data dredging

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This article includes a list of references, but **its sources remain unclear because it has insufficient inline citations**. Please help toimprove this article by introducing more precise citations. *(November 2008)*

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4. ^ Meester, R.; Collins, M.; Gill, R.; van Lambalgen, M. (2007-05-05). "On the (ab)use of statistics in the legal case against the nurse Lucia de B.". *Law, Probability & Risk* **5** (3–4): 233–250.arXiv:math/0607340. doi:10.1093/lpr/mgm003. "[page 11] Writing E for the observed event, and H for the hypothesis of chance, Elffers calculated P(**E** | H) < 0.0342%, while the court seems to have concluded that P(**H** | E) < 0.0342%"
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16. ^ The uncertainty in this range is mainly driven by uncertainty in the likelihood of killing a second child, having killed a first, see: Hill, R. (2004). "Multiple sudden infant deaths – coincidence or beyond coincidence?". *Paediatric and Perinatal Epidemiology* **18**: 322–323.
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[edit]External links

- Discussion of the prosecutor's fallacy
- Forensic mathematics of DNA matching
- Thompson, W. C.; Schumann, E. L. (1987). "Interpretation of Statistical Evidence in Criminal Trials: The Prosecutor's Fallacy and the Defense Attorney's Fallacy". *Law and Human Behavior* **11**(3): 167–187. JSTOR 1393631.
- A British statistician on the fallacy

Psychologist's fallacy

From Wikipedia, the free encyclopedia

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The **psychologist's fallacy** is a fallacy that occurs when an observer presupposes the universality of his/her own perspective when analyzing a behavioral event. The fallacy was named by William James in the 19th century. It is a specific form of the "similar to me" stereotype: what is unknown about another person is assumed, for simplicity, using things the observer knows about himself or herself. Such a bias leads the observer to presuppose knowledge or skills, or lack of such, possessed by another person. For example, "I (or everyone I know or most people I know) don't know very much about chemistry. Therefore I can assume that this other person knows very little about chemistry." This assumption may be true in any number of specific cases, making inductive reasoning based on this assumption cogent, but is not applicable in the general case (there are many people who are very knowledgeable in the field of chemistry), and therefore deductive reasoning based on this assumption may be invalid.

> The great snare of the psychologist is the confusion of his own standpoint with that of the mental fact about which he is making his report. I shall hereafter call this the ‘psychologist's fallacy’ par excellence. (William James, *Principles of Psychology* volume I. chapter vii. p. 196, 1890)
>
> Psychologist's fallacy, the fallacy, to which the psychologist is peculiarly liable, of reading into the mind he is examining what is true of his own; especially of reading into lower minds what is true of higher. (James Mark Baldwin, *Dictionary of Philosophy and Psychology* volume II. p. 382/2, 1902)
>
> A danger to be avoided known as the ‘psychologist's fallacy’. This arises from the fact that the experimenter is apt to suppose that the subject will respond to a stimulus or an order in the same way as he himself would respond in the circumstances. (*British Journal of Psychology*. XXI. p. 243, 1931)

The psychologist's fallacy is considered analogous to David Hackett Fischer's historian's fallacy.

[edit]See also

- Mind projection fallacy

Ignoratio elenchi

From Wikipedia, the free encyclopedia

Ignoratio elenchi, also known as **irrelevant conclusion**,[1] is the informal fallacy of presenting an argument that may or may not be logically valid, but fails nonetheless to address the issue in question.

Ignoratio elenchi falls into the broad class of relevance fallacies.[2] It is one of the fallacies identified by Aristotle in his *Organon*. In a broader sense he asserted that all fallacies are a form of*ignoratio elenchi*.[3][4]

Ignoratio Elenchi, according to Aristotle, is a fallacy which arises from “ignorance of the nature of refutation.” In order to refute an assertion, Aristotle says we must prove it's contradictory; the proof, consequently, of a proposition which stood in any other relation than that to the original, would be an *ignoratio elenchi*… Since Aristotle, the scope of the fallacy has been extended to include all cases of proving the wrong point… “I am required to prove a certain conclusion; I prove, not that, but one which is likely to be mistaken for it; in that lies the fallacy… For instance, instead of proving that ‘this person has committed an atrocious fraud,’ you prove that ‘this fraud he is accused of is atrocious;’” … The nature of the fallacy, then, consists in substituting for a certain issue another which is more or less closely related to it, and arguing the substituted issue. The fallacy does not take into account whether the arguments do or do not really support the substituted issue, it only calls attention to the fact that they do not constitute a proof of the original one… It is a particularly prevalent and subtle fallacy and it assumes a great variety of forms. But whenever it occurs and whatever form it takes, it is brought about by an assumption that leads the person guilty of it to substitute for a definite subject of inquiry another which is in close relation with it.[5]
—Arthur Ernest Davies, *"Fallacies" in A Text-Book of Logic*

The phrase *ignoratio elenchi* is Latin meaning "ignorance of refutation". Here *elenchi* is the genitive singular of the Latin noun *elenchus*, which is from the Greek ἔλεγχος *elenchos*, meaning an argument of disproof or refutation.[6] The translation in English of the Latin expression has varied a fair bit. Hamblin proposed "misconception of refutation" or "ignorance of refutation" as a literal translation,[7] Oesterle preferred "ignoring the issue",[7] Irving Copi, Christopher Tindale and others used "irrelevant conclusion".[7][8]

An example might be a situation where A and B are debating whether the law permits A to do something. If A attempts to support his position with an argument that the law *ought* to allow him to do the thing in question, then he is guilty of *ignoratio elenchi*.[9] Dr Johnson's unique "refutation" of Bishop Berkeley's immaterialism, his claim that matter did not actually exist but only seemed to exist,[10] has been described as *Ignoratio elenchi*:[11] during a conversation with Boswell, Johnson powerfully kicked a nearby stone and proclaimed of Berkeley's theory, "I refute it *thus*!"[12]

A related concept is that of the red herring, which is a deliberate attempt to divert a process of enquiry by changing the subject.[2] Ignoratio elenchi is sometimes confused with straw manargument.[2] For example, it has been described as "attacking what the other fellow never said" by Peter Jay in an article in a 1996 article in New Statesman.[13][*verification needed*]

[edit]See also

- *Ad hominem*
- Chewbacca defense
- Enthymeme
- *Non sequitur* (logic)
- *Reductio ad Hitlerum*
- Sophism
- Red herring
- Straw man
- List of fallacies

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[edit]External links

Look up *red herring* in Wiktionary, the free dictionary.

- Appeal to Authority Breakdown, Examples, Definitions, & More
- Nizkor Project: Red Herring
- Fallacy Files: Red Herring
- The Phrase Finder: Red Herring
- The Art of Controversy: Diversion (bilingual with the original German) by Arthur Schopenhauer
- Red herring in political speech
- Ignoratio Elechi on TV Tropes

Regression fallacy

From Wikipedia, the free encyclopedia

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The **regression** (or **regressive**) **fallacy** is an informal fallacy. It ascribes cause where none exists. The flaw is failing to account for natural fluctuations. It is frequently a special kind of the post hoc fallacy.

Contents

[hide]

1 Explanation

2 Examples

3 Misapplication

4 Notes

5 References

6 External links

[edit]Explanation

Things like golf scores, the earth's temperature, and chronic back pain fluctuate naturally and usually regress towards the mean. The logical flaw is to make predictions that expect exceptional results to continue as if they were average (see Representativeness heuristic). People are most likely to take action when variance is at its peak. Then after results become more normal they believe that their action was the cause of the change when in fact it was not causal.

This use of the word "regression" was coined by Sir Francis Galton in a study from 1885 called "Regression Toward Mediocrity in Hereditary Stature". He showed that the height of children from very short or very tall parents would move towards the average. In fact, in any situation where two variables are less than perfectly correlated, an exceptional score on one variable may not be matched by an equally exceptional score on the other variable. The imperfect correlation between parents and children (height is not entirely heritable) means that the distribution of heights of their children will be centered somewhere between the average of the parents and the average of the population as whole. Thus, any single child can be more extreme than the parents, but the odds are against it.

[edit]Examples

When his pain got worse, he went to a doctor, after which the pain subsided a little. Therefore, he benefited from the doctor's treatment.

The pain subsiding a little after it has gotten worse is more easily explained by regression towards the mean. Assuming the pain relief was caused by the doctor is fallacious.

The student did exceptionally poorly last semester, so I punished him. He did much better this semester. Clearly, punishment is effective in improving students' grades.

Often exceptional performances are followed by more normal performances, so the change in performance might better be explained by regression towards the mean. Incidentally, some experiments have shown that people may develop a systematic bias for punishment and against reward because of reasoning analogous to this example of the regression fallacy.[1]

The frequency of accidents on a road fell after a speed camera was installed. Therefore, the speed camera has improved road safety.

Speed cameras are often installed after a road incurs an exceptionally high number of accidents, and this value usually falls (regression to mean) immediately afterwards. Many speed camera proponents attribute this fall in accidents to the speed camera, without observing the overall trend.

Some authors have claimed that the alleged "Sports Illustrated Cover Jinx" is a good example of a regression effect: extremely good performances are likely to be followed by less extreme ones, and athletes are chosen to appear on the cover of *Sports Illustrated* only after extreme performances. Assuming athletic careers are partly based on random factors, attributing this to a "jinx" rather than regression, as some athletes reportedly believed, would be an example of committing the regression fallacy.[2]

[edit]Misapplication

On the other hand, dismissing valid explanations can lead to a worse situation. For example:

After the Western Allies invaded Normandy, creating a second major front, German control of Europe waned. Clearly, the combination of the Western Allies and the USSR drove the Germans back.

Fallacious evaluation: "Given that the counterattacks against Germany occurred only after they had conquered the greatest amount of territory under their control, regression to the mean can explain the retreat of German forces from occupied territories as a purely random fluctuation that would have happened without any intervention on the part of the USSR or the Western Allies." This is clearly not the case. The reason is that political power and occupation of territories is not primarily determined by random events, making the concept of regression to the mean inapplicable (on the large scale).

In essence, misapplication of regression to the mean can reduce all events to a "just so" story, without cause or effect. (Such misapplication takes as a premise that all events are random, as they must be for the concept of regression to the mean to be validly applied.)

[edit]Notes

1. ^ Schaffner, 1985; Gilovich, 1991 pp. 27–28
2. ^ Gilovich, 1991 pp. 26–27; Plous, 1993 p. 118

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[edit]External links

- Fallacy files: Regression fallacy
- The Truth Wears Off -- Is there something wrong with the scientific method?

Reification (fallacy)

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Contents

[hide]

1 Etymology

2 Theory

3 Difference between reification and hypostatization

4 Fallacy of misplaced concreteness

5 The use of constructs in science

6 Relation to other fallacies

7 As a rhetorical device

8 Concrete abstractions in philosophy

9 See also

10 References

Reification (also known as **concretism**, or **the fallacy of misplaced concreteness**) is a fallacy of ambiguity, when an abstraction(abstract belief or hypothetical construct) is treated as if it were a concrete, real event, or physical entity.[1][2] In other words, it is the error of treating as a concrete thing something which is not concrete, but merely an idea. For example: if the phrase "fighting for justice" is taken literally, *justice* would be reified.

Another common manifestation is the confusion of a model with reality. Mathematical or simulation models may help understand a system or situation but real life may differ from the model.

Note that reification is generally accepted in literature and other forms of discourse where reified abstractions are understood to be intendedmetaphorically,[2] but the use of reification in logical arguments is usually regarded as a fallacy. In rhetoric, it may be sometimes difficult to determine if reification was used correctly or incorrectly.

The concept is important because—as Arturo Rosenblueth, Norbert Wiener, and R. C. Lewontin have put it—"the price of metaphor is eternal vigilance."[2] Indeed, when that vigilance has slipped, whole new fields of study have been built on top of the resulting misunderstanding. Thus, for example, memetics. The notion that ideas are literally "infectious," "predatory," and "selfish" is a fallacious reification of the idea-as-organism metaphor:

...a meme, if it does exist, cannot seek out prey. And it certainly cannot leap from one brain to another. The conceit of thinking in this way is just useful sometimes.[3]

[edit]Etymology

From Latin *res* thing + *facere* to make, reification can be loosely translated as thing-making; the turning of something abstract into a concrete thing or object.

[edit]Theory

Reification often takes place when natural or social processes are misunderstood and/or simplified; for example when human creations are described as "facts of nature, results of cosmic laws, or manifestations of divine will".[4] Reification can also occur when a word with a normal usage is given an invalid usage, with mental constructs or concepts referred to as live beings. When human-like qualities are attributed as well, it is a special case of reification, known as pathetic fallacy (or anthropomorphic fallacy).

> *Nature provides empathy that we may have insight into the mind of others.*

Reification may derive from an inborn tendency to simplify experience by assuming constancy as much as possible.[5]

[edit]Difference between reification and hypostatization

Sometimes a distinction is drawn between reification and *hypostatization* based on the kinds of abstractions involved. In reification they are usually philosophical or ideological, such as existence, good, and justice.[2]

[edit]Fallacy of misplaced concreteness

In the philosophy of Alfred North Whitehead, one commits the **fallacy of misplaced concreteness** when one mistakes an abstract belief, opinion or concept about the way things are for a physical or "concrete" reality.

There is an error; but it is merely the accidental error of mistaking the abstract for the concrete. It is an example of what I will call the ‘Fallacy of Misplaced Concreteness.’[6]

Whitehead proposed the fallacy in a discussion of the relation of spatial and temporal location of objects. He rejects the notion that a concrete physical object in the universe can be ascribed a simple spatial or temporal extension, that is, without reference of its relations to other spatial or temporal extensions.

...among the primary elements of nature as apprehended in our immediate experience, there is no element whatever which possesses this character of simple location. ... [Instead,] I hold that by a process of constructive abstraction we can arrive at abstractions which are the simply located bits of material, and at other abstractions which are the minds included in the scientific scheme. Accordingly, the real error is an example of what I have termed: The Fallacy of Misplaced Concreteness.[7]

[edit]The use of constructs in science

Main article: Construct (philosophy of science)

The concept of a "construct" has a long history in science; it is used in many, if not most, areas of science. A construct is a hypothetical explanatory variable that is not directly observable. For example, the concepts of *motivation* in psychology and *center of gravity* in physics are constructs -- they are not directly observable. The degree to which a construct is useful and accepted in the scientific community depends on empirical research that has demonstrated that a scientific construct has construct validity (especially, predictive validity).[8] Thus, if properly understood and empirically corroborated, the "reification fallacy" applied to scientific constructs is not a fallacy at all—it is one part of theory creation and evaluation in normal science.

[edit]Relation to other fallacies

Pathetic fallacy (also known as anthropomorphic fallacy or anthropomorphization) is a specific type of reification. Just as reification is the attribution of concrete characteristics to an abstract idea, a pathetic fallacy is committed when those characteristics are specifically human characteristics, especially thoughts or feelings.[9] Pathetic fallacy is also related to personification, which is a direct and explicit ascription of life and sentience to the thing in question, whereas the pathetic fallacy is much broader and more allusive.

The animistic fallacy involves attributing personal intention to an event or situation.

Reification fallacy should not be confused with other fallacies of ambiguity:

- Accentus, where the ambiguity arises from the emphasis (accent) placed on a word or phrase
- Amphiboly, a verbal fallacy arising from ambiguity in the grammatical structure of a sentence
- Composition, when one assumes that a whole has a property solely because its various parts have that property
- Division, when one assumes that various parts have a property solely because the whole has that same property
- Equivocation, the misleading use of a word with more than one meaning

[edit]As a rhetorical device

Reification is commonly found in rhetorical devices such as metaphor and personification. In those cases we are usually not dealing with a fallacy but with rhetorical applications of language. The distinction is that the fallacy occurs during an argument that results in false conclusions. This distinction is often difficult to make, particularly when the fallacious use is intentional.[2]

[edit]Concrete abstractions in philosophy

Many philosophers considered abstract concepts to be concrete entities. For example, Hegel wrote "Truth is its own self–movement.…" and "Science exists solely in the self–movement of the Notion.…"[10]

[edit]See also

- Map–territory relation
- No true Scotsman
- Philosophical realism
- Vitalism

[edit]References

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2. ^ *a* *b* *c* *d* Logical Fallacies, Formal and Informal
3. ^ Page 98 of Burman, J. T. (2012). The misunderstanding of memes: Biography of an unscientific object, 1976–1999. *Perspectives on Science*, *20*(1), 75-104. [1] doi:10.1162/POSC_a_00057(This is an open access article, made freely available courtesy of MIT Press.)
4. ^ David K. Naugle, *Worldview: the history of a concept*, Wm. B. Eerdmans Publishing, 2002, ISBN 0-8028-4761-7, Google Print, p.178
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Retrospective determinism

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Retrospective determinism is the informal fallacy that because something happened, it was therefore bound to happen; the term was coined by the French philosopher Henri Bergson. For example:

> *When he declared himself dictator of the Roman Republic, Julius Caesar was bound to be assassinated.*

Were this an argument, it would give no rational grounds on which to conclude that Caesar's assassination was the only possible outcome, or even the most likely outcome under the circumstances. This type of fallacy can preceed a hasty generalization: because something happened in given circumstances, it was not only bound to happen, but will in fact always happen given those circumstances. For example:

> *Caesar was assassinated when he declared himself dictator. Sic semper tyrannis: this goes to show that all dictators will eventually be assassinated.*

Not only is this irrational, it is factually false.

[edit]See also

- Historian's fallacy
- Post hoc ergo propter hoc

Special pleading

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This article is about the informal fallacy. For the legal concept, see Special pleader.

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Special pleading, also known as **stacking the deck**, **ignoring the counterevidence**, **slanting**, and **one-sided assessment**,[1] is a form of spurious argument where a position in a dispute introduces favourable details or excludes unfavourable details by alleging a need to apply additional considerations without proper criticism of these considerations. Essentially, this involves someone attempting to cite something as an exemption to a generally accepted rule, principle, etc. without justifying the exemption.[2]

The lack of criticism may be a simple oversight (e.g., a reference to common sense) or an application of a double standard.

Contents

[hide]

1 Examples

2 See also

3 References

4 External links

[edit]Examples

A more difficult case is when a possible criticism is made relatively immune to investigation. This immunity may take the forms of:

- unexplained claims of exemption from principles commonly thought relevant to the subject matter

  Example: *I'm not relying on faith in small probabilities here. These are slot machines, not roulette wheels. They are different.*

- claims to data that are inherently unverifiable, perhaps because too remote or impossible to define clearly

  Example: *Cocaine use should be legal. Like all drugs, it does have some adverse health effects, but cocaine is different from other drugs. Many have benefited from the effects of cocaine.*

- appeals to "common knowledge" that bypass supporting data

  Example: *Everyone knows you can catch a common cold from exposure to a chill.*

- assertion that the opponent lacks the qualifications necessary to comprehend a point of view

  Example: *I know you think that quantum mechanics does not always make sense. There are things about quantum mechanics that you don't have the education to understand.*

- assertion that nobody has the qualifications necessary to comprehend a point of view

  Example: *I know the idea that ball lightning is caused by ghosts makes no sense to you, but that's only because you're human. Humans cannot understand supernatural phenomena.*

In the classic distinction among informal (material), psychological, and formal (logical) fallacies, special pleading most likely falls within the category of psychological fallacy, as it would seem to relate to "lip service", rationalization and diversion (abandonment of discussion). Special pleading also often resembles the "appeal to" logical fallacies.[3]

In medieval philosophy, it was not assumed that wherever a distinction is claimed, a relevant basis for the distinction should exist and be substantiated. Special pleading subverts an assumption of existential import.

[edit]See also

- One-sided argument
- No true Scotsman

[edit]References

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2. ^ Damer, T. Edward (2008). *Attacking Faulty Reasoning: A Practical Guide to Fallacy-free Arguments* (6 ed.). Cengage Learning. pp. 122–124. ISBN 978-0-495-09506-4.
3. ^ This division is found in introductory texts such as *Fallacy: The Counterfeit of Argument*, W. Ward Fearnside, Prentice-Hall, Inc., 1959. OCLC 710677

[edit]External links

- Special pleading at the Fallacy Files
- Special pleading at the Nizkor Project
- The One-Sidedness Fallacy by Peter Suber.

Wrong direction

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It has been suggested that this article or section be merged into *Correlation does not imply causation*. (Discuss) *Proposed since June 2011.*

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Wrong direction is an informal fallacy of questionable cause where cause and effect are reversed. The cause is said to be the effect and vice versa.

For instance, the statement:

> *Driving a wheelchair is dangerous, because most people who drive them have had an accident.*

In other cases it may simply be unclear which is the cause and which is the effect. For example:

Children that watch a lot of TV are the most violent. Clearly, TV makes children more violent.

This could easily be the other way round; that is, violent children like watching more TV than less violent ones.

Likewise, a correlation between recreational drug use and psychiatric disorders might be either way around: perhaps the drugs cause the disorders, or perhaps people use drugs to self medicatefor preexisting conditions.

Gateway drug theory may argue that marijuana usage leads to usage of harder drugs, but hard drug usage may lead to marijuana usage (see also *confusion of the inverse*). Indeed in the social sciences where controlled experiments often cannot be used to discern the direction of causation, this fallacy can fuel long-standing scientific arguments. One such example can be found ineducation economics, between the screening/signaling and human capital models: it could either be that having innate ability enables one to complete an education, or that completing an education builds one's ability.

A historical example of this is that Europeans in the Middle Ages believed that lice were beneficial to your health, since there would rarely be any lice on sick people. The reasoning was that the people got sick because the lice left. The real reason however is that lice are extremely sensitive to body temperature. A small increase of body temperature, such as in a fever, will make the lice look for another host. The medical thermometer had not yet been invented, so this increase in temperature was rarely noticed. Noticeable symptoms came later, giving the impression that the lice left before the person got sick.[*citation needed*]

In other cases, two phenomena can each be a partial cause of the other; consider poverty and lack of education, or procrastination and poor self-esteem. One making an argument based on these two phenomena must however be careful to avoid the fallacy of circular cause and consequence. Poverty is *a* cause of lack of education, but it is not the *sole* cause, and vice versa.

[edit]Apperances in TV

Wrong Direction is often used as a parody band of One Direction.

[edit]See also

- Joint effect
- Spurious relationship

Faulty generalizations

Faulty generalizations – reach a conclusion from weak premises. Unlike fallacies of relevance, in fallacies of defective induction, the premises are related to the conclusions yet only weakly buttress the conclusions. A faulty generalization is thus produced.

- Accident – an exception to a generalization is ignored.[38]
  - No true Scotsman – when a generalization is made true only when a counterexample is ruled out on shaky grounds.[39]
- Cherry picking (suppressed evidence, incomplete evidence) – act of pointing at individual cases or data that seem to confirm a particular position, while ignoring a significant portion of related cases or data that may contradict that position.[40]
- False analogy – an argument by analogy in which the analogy is poorly suited.[41]
- Hasty generalization (fallacy of insufficient statistics, fallacy of insufficient sample, fallacy of the lonely fact, leaping to a conclusion, hasty induction, *secundum quid*, converse accident) – basing a broad conclusion on a small sample.[42]
- Misleading vividness – involves describing an occurrence in vivid detail, even if it is an exceptional occurrence, to convince someone that it is a problem.
- Overwhelming exception – an accurate generalization that comes with qualifications which eliminate so many cases that what remains is much less impressive than the initial statement might have led one to assume.[43]
- Pathetic fallacy – when an inanimate object is declared to have characteristics of animate objects.[44]
- Thought-terminating cliché – a commonly used phrase, sometimes passing as folk wisdom, used to quell cognitive dissonance, conceal lack of thought-entertainment, move onto other topics etc. but in any case, end the debate with a cliche—not a point.

Faulty generalization

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A **fallacy of defective induction** reaches a conclusion from weak premises. Unlike fallacies of relevance, in fallacies of defective induction, the premises *are* related to the conclusions yet only weakly buttress the conclusions. A **faulty generalization** is thus produced. This **inductive fallacy** is any of several errors of inductive inference.

Contents

[hide]

1 Logic

2 Inductive fallacies

3 See also

4 References

[edit]Logic

The proportion Q of the sample has attribute A.

Therefore, the proportion Q of the population has attribute A.

Such a generalization proceeds from a premise about a sample to a conclusion about the population.

Faulty generalization is a mode of thinking that takes knowledge from one group's or person's experiences and incorrectly extends it to another.

[edit]Inductive fallacies

- Hasty generalization is the fallacy of examining just one or very few examples or studying a single case, and generalizing that to be representative of the whole class of objects or phenomena.
- The opposite, Slothful induction, is the fallacy of denying the logical conclusion of an inductive argument, dismissing an effect as "just a coincidence" when it is very likely not to be.
- The overwhelming exception is related to the hasty generalization, but working from the other end. It is a generalization which is accurate, but tags on a qualification which eliminates enough cases (as exceptions); that what remains is much less impressive than what the original statement might have led one to assume.
- Biased sample – When the above happen because of (personal) bias of the sampling entity.
- Misleading vividness is a kind of hasty generalization that appeals to the senses.
- Statistical special pleading occurs when the interpretation of the relevant statistic is "massaged" by looking for ways to reclassify or requantify data from one portion of results, but not applying the same scrutiny to other categories.

> *"All generalizations are dangerous, even this one."*
>
> Alexandre Dumas, fils[1]

[edit]See also

- Association fallacy
- Cherry picking (fallacy)
- Package-deal fallacy
- Straw man

[edit]References

1. ^ All generalizations are dangerous, even this one. by Alexandre Dumas

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Accident (fallacy)

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The informal fallacy of **accident** (also called **destroying the exception** or ***a dicto simpliciter ad dictum secundum quid***) is a deductively valid but unsound argument occurring in statistical syllogisms (an argument based on a generalization) when an exception to a rule of thumb[1] is ignored. It is one of the thirteen fallacies originally identified by Aristotle. The fallacy occurs when one attempts to apply a general rule to an irrelevant situation.

For instance:

1. Cutting people with knives is a crime.
2. Surgeons cut people with knives.
3. Surgeons are criminals.

It is easy to construct fallacious arguments by applying general statements to specific incidents that are obviously exceptions.

Generalizations that are weak generally have more exceptions (the number of exceptions to the generalization need not be a minority of cases) and vice versa.

This fallacy may occur when we confuse particulars ("some") for categorical statements ("always and everywhere"). It may be encouraged when no qualifying words like "some", "many", "rarely" etc. are used to mark the generalization.

Related inductive fallacies include: overwhelming exception, hasty generalization. See faulty generalization.

The opposing kind of dicto simpliciter fallacy is the converse accident.

[edit]References

1. ^ http://fallacyfiles.org/accident.html

[edit]External links

- Fallacy files: Accident

No true Scotsman

From Wikipedia, the free encyclopedia

For the practice of wearing a kilt without undergarments, see True Scotsman.

No true Scotsman is an informal fallacy, an *ad hoc* attempt to retain an unreasoned assertion.[1] When faced with a counterexample to a universal claim, rather than denying the counterexample or rejecting the original universal claim, this fallacy modifies the subject of the assertion to exclude the specific case or others like it by rhetoric, without reference to any specific objective rule.

Contents

[hide]

1 Origin
2 Examples
3 See also
4 References

[edit]Origin

The use of the term was advanced by British philosopher Antony Flew:

Imagine Hamish McDonald, a Scotsman, sitting down with his *Glasgow Morning Herald* and seeing an article about how the "Brighton Sex Maniac Strikes Again". Hamish is shocked and declares that "No Scotsman would do such a thing". The next day he sits down to read his *Glasgow Morning Herald* again; and, this time, finds an article about anAberdeen man whose brutal actions make the Brighton sex maniac seem almost gentlemanly. This fact shows that Hamish was wrong in his opinion but is he going to admit this? Not likely. This time he says, "No *true* Scotsman would do such a thing".[2]

When the statement "all *A* are *B*" is qualified like this to exclude those *A* which are not *B*, this is a form of begging the question; the conclusion is assumed by the definition of "true *A*".

[edit]Examples

A simple rendition would be:

> **Alice:** All Scotsmen enjoy haggis.
>
> **Bob:** My uncle is a Scotsman, and he doesn't like haggis!
>
> **Alice:** Well, all *true* Scotsmen like haggis.

An example of a political application of the fallacy could be in asserting that "no democracy starts a war", then distinguishing between mature or "true" democracies, which never start wars, and "emerging democracies", which may start them.[3] At issue is whether or not something labelled as an "emerging democracy" is actually a democracy or something in a different conceptual category.

In Scotland itself, the most famous rendition may be the former slogan of the one-time largest selling tabloid, *The Daily Record*, which proclaimed "Real Scots read *The Record*".[4] The paper's editorials were always strongly in favour of the Scottish Labour Party; and, at the time, the paper's position as the largest-selling tabloid was under threat from Scottish versions of UK-wide publications such as *The Scottish Sun*. It was asserted that those who supported the Conservative Party or the Scottish National Party or who read English-owned papers were not "real Scots".

[edit]See also

- Exception that proves the rule
- Cognitive dissonance
- Epistemic commitment
- Equivocation
- Euphemism
- Loaded language
- Moving the goalposts
- Persuasive definition
- Reification (fallacy)
- Special pleading

[edit]References

Notes

1. ^ No True Scotsman, *Internet Encyclopedia of Philosophy*
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3. ^ Spengler. "No true Scotsman starts a war", *Asia Times Online*, Jan 31, 2006
4. ^ "Political Journalists and Nationalist Parties in Scotland and Quebec", Scottish Affairs, Autumn 2001

Cherry picking (fallacy)

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Cherry picking, **suppressing evidence**, or the **fallacy of incomplete evidence** is the act of pointing to individual cases or data that seem to confirm a particular position, while ignoring a significant portion of related cases or data that may contradict that position. It is a kind of fallacy of selective attention, the most common example of which is the confirmation bias. Cherry picking may be committed unintentionally.[1]

The term is based on the perceived process of harvesting fruit, such as cherries. The picker would be expected to only select the ripest and healthiest fruits. An observer who only sees the selected fruit may thus wrongly conclude that most, or even all, of the fruit is in such good condition.

Cherry picking can be found in many logical fallacies. For example, the "fallacy of anecdotal evidence" tends to overlook large amounts of data in favor of that known personally, "selective use of evidence" rejects material unfavorable to an argument, while a false dichotomy picks only two options when more are available.

Contents

[hide]

1 In statistics
2 In science

3 See also

4 References

[edit]In statistics

Cherry picking can refer to the selection of data or data sets so a study or survey will give desired, predictable results which may be misleading or even completely contrary to actuality.[2]

[edit]In science

> Choosing to make selective choices among competing evidence, so as to emphasize those results that support a given position, while ignoring or dismissing any findings that do not support it, is a practice known as "cherry picking" and is a hallmark of poor science or pseudo-science.
> — Richard Somerville, Testimony before the US House of Representatives Committee on Energy and Commerce Subcommittee on Energy and Power, March 8, 2011[3]

Good science looks at all the evidence (rather than cherry picking only favorable evidence), controls for variables so we can identify what is actually working, uses blinded observations so as to minimize the effects of bias, and uses internally consistent logic."[*who?*][4]

[edit]See also

- Biased sample
- Confirmation bias
- Proof by example
- Fallacy of quoting out of context
- Golden sample
- Hasty generalization
- Informal fallacy
- Selection bias

[edit]References

1. ^ The Internet Encyclopedia of Philosophy, "Fallacies", Bradley Dowden (2010)
2. ^ Ben Goldacre. *Bad Science*. Fourth Estate. pp. 97–9. ISBN 978-0-00-728487-0.
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4. ^ Science-Based Medicine » A Skeptic In Oz

False analogy

From Wikipedia, the free encyclopedia

A **false analogy** is a faulty instance of the argument from analogy.

Contents

[hide]

1 Argument from analogy

2 False analogy

3 See also

4 References

[edit]Argument from analogy

The process of analogical inference involves noting the shared properties of two or more things, and from this basis inferring that they also share some further property.[1][2] The structure or form may be generalized like so:[1]

P and Q are similar in respect to properties a, b, and c.

Object P has been observed to have further property x.

Therefore, Q probably has property x also.

[edit]False analogy

Several factors affect the strength of the argument from analogy:

The **relevance** of the *known* similarities to the similarity *inferred in the conclusion*.[1][2]

The **amount** and **variety** of the examples in the analogy.[1][2]

The **number of characteristics** that the things being compared share.[1][2]

An argument from analogy is weakened if it is inadequate in any of the above respects. The term "false analogy" comes from the philosopher John Stuart Mill, who was one of the first individuals to engage in a detailed examination of analogical reasoning.[2] One of Mill's examples involved an inference that some person is lazy from the observation that his or her sibling is lazy. According to Mill, sharing parents is not all that relevant to the property of laziness.[2]

A basic example: "The model of the solar system is similar to that an atom, with planets orbiting the sun like electrons orbiting the nucleus. Electrons can jump from orbit to orbit; so we should study ancient records for sightings of planets jumping from orbit to orbit."

A further clear example is:

Sam: *"I think that people can have some affection for their cultural heritage."*

Michelle: *"You're just like Hitler!"*

In the above example, Michelle has evaded a reasoned discussion by tarring Sam with an irrelevant association to an idea that Hitler used. Of course no one person is identical to another to the extent that their proposals can be disparaged by a mere reference to that other person. It is a form of ad hominem: Attacking the messenger, rather than the message.

[edit]See also

- List of fallacies

[edit]References

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2. ^ a b c d e f Salmon, M. H. (2006). *Introduction to Critical Reasoning*. Mason, OH: Thomson Wadsworth. pp. 132–142.

Argument by analogy

Argument by analogy may be thought of as argument from the particular to particular. An argument by analogy may use a particular truth in a premise to argue towards a similar particular truth in the conclusion. For example, if A. Plato was mortal, and B. Socrates was like Plato in other respects, then asserting that C. Socrates was mortal is an example of argument by analogy because the reasoning employed in it proceeds from a particular truth in a premise (Plato was mortal) to a similar particular truth in the conclusion, namely that Socrates was mortal.[10]

Hasty generalization

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Hasty generalization is an informal fallacy of faulty generalization by reaching an inductive generalization based on insufficient evidence— essentially making a hasty conclusion without considering all of the variables. In statistics, it may involve basing broad conclusions regarding the statistics of a survey from a small sample group that fails to sufficiently represent an entire population.[1] Its opposite fallacy is called slothful induction, or denying a reasonable conclusion of an inductive argument (e.g. "it was just a coincidence").

Context is also relevant; in mathematics, the Pólya conjecture is true for numbers less than 906,150,257, but fails for this number. Assuming something to be true for all numbers when it has been shown for over 906 million cases would not generally be considered hasty, but in mathematics a statement remains a conjecture until it is shown to be universally true.

Contents

[hide]

1 Examples

2 Alternative names

3 See also

4 References

5 External links

[edit]Examples

Hasty generalization usually shows this pattern

X is true for A.

X is true for B.

X is true for C.

X is true for D.

Therefore, X is true for E, F, G, etc.

- A person travels through a town for the first time. He sees 10 people, all of them children. The person then concludes that there are no adult residents in the town.
- A person is looking at a number line. 3 is a prime number, 5 is a prime number, and 7 is a prime number. 9 is probably an anomaly, so it is ignored. 11 is a prime number, and 13 is a prime number. Therefore, the person says, all odd numbers are prime.

[edit]Alternative names

The fallacy is also known as the fallacy of insufficient statistics, fallacy of insufficient sample, generalization from the particular, leaping to a conclusion, hasty induction, law of small numbers, unrepresentative sample, and *secundum quid*. When referring to a generalization made from a single example it has been called the fallacy of the lonely fact[2] or the proof by example fallacy.[3]

When evidence is intentionally excluded to bias the result, it is sometimes termed the fallacy of exclusion and is a form of selection bias.[4]

[edit]See also

- Accident (fallacy)
- Blind men and an elephant
- Categorical imperative redirected from "Generalization in Ethics"
- Cognitive distortion
- Converse accident
- Generalization (logic)
- Generalization error
- Hypercorrection
- Problem of induction
- Slothful induction
- Statistical significance
- Syllogism

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[edit]External links

- Common Logical Fallacies in Propaganda and Debate
- Fallacy: Hasty Generalization, Michael C. Labossiere's Fallacy Tutorial Pro
- Hasty Generalization, The Fallacy Files

Misleading vividness

From Wikipedia, the free encyclopedia

Misleading vividness is a term that can be applied to anecdotal evidence[1] describing an occurrence, even if it is an exceptional occurrence, with sufficient detail to permit hasty generalizationsabout the occurrence (e.g., to convince someone that the occurrence is a widespread problem). Although misleading vividness does little to support an argument logically, it can have a very strong psychological effect because of a cognitive heuristic called the availability heuristic.

Example:

> *Anne:* "I am giving up extreme sports now that I have children. I think I will take up golf."
> *Bill:* "I wouldn't do that. Do you remember Charles? He was playing golf when he got hit by a golf-cart. It broke his leg, and he fell over, giving himself a concussion. He was in hospital for a week and still walks with a limp. I would stick to paragliding!"

This rhetoric permits a kind of hasty generalization when an inductive generalization is a necessary premise and a single (albeit vivid) example is not sufficient to support such a generalization. See faulty generalization.

[edit]See also

- Parade of horribles
- Perfect solution fallacy
- Texas sharpshooter fallacy
- *Liebeck v. McDonald's Restaurants* (the "hot coffee lawsuit")

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Overwhelming exception

From Wikipedia, the free encyclopedia

This article **does not cite any references or sources**. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. *(January 2008)*

An **overwhelming exception** is an informal fallacy similar to a hasty generalization. It is a generalization that is accurate, but comes with one or more qualifications which eliminate so many cases that what remains is much less impressive than the initial statement might have led one to believe.

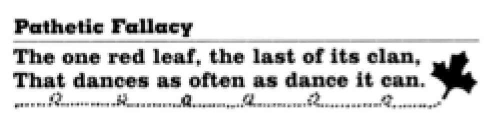
Examples:

- "All right, but apart from the sanitation, the medicine, education, wine, public order, irrigation, roads, a fresh water system, and public health, what have the Romans ever done for us?" *(The attempted implication (fallacious in this case) is that the Romans did nothing for us). This is a quotation from Monty Python's Life of Brian.*
- "Our foreign policy has always helped other countries, except of course when it is against our National Interest..." *(The false implication is that our foreign policy always helps other countries).*
- "Well, I promise the answer will always be 'yes.' Unless 'no' is required." (from *Madagascar: Escape 2 Africa*)

See also faulty generalization for other fallacies involving generalization.

Pathetic fallacy

From Wikipedia, the free encyclopedia


Pathetic Fallacy
The one red leaf, the last of its clan,
That dances as often as dance it can.

An illustration of the literary use of the pathetic fallacy, from Samuel Taylor Coleridge's poem*Christabel*. This was used by Ruskin as an example, in his seminal essay *Of the Pathetic Fallacy.*

The **pathetic fallacy** is the treatment of inanimate objects as if they had human feelings, thought, or sensations.[1] The word 'pathetic' in this use is related to 'pathos' or 'empathy' (capability of feeling), and is not pejorative. In the discussion of literature, the pathetic fallacy is similar topersonification.

Contents

[hide]

1 History

2 In legend

3 In literature and popular culture

- 3.1 Examples

4 In science

5 See also

6 References

7 Further reading

[edit]History

The term was coined by the critic John Ruskin (1819–1900) in his 1856 work *Modern Painters*.[2] Nine years after Ruskin’s death, the first edition of *The Oxford English Dictionary* quotes Ruskin: “All violent feelings ... produce ... a falseness in ... impressions of external things, which I would generally characterize as the ‘Pathetic fallacy’”.[3]

To demonstrate his meaning Ruskin quotes Charles Kingsley’s poem, “The Sands of Dee”:

"They rowed her in across the rolling foam -
The cruel, crawling foam"

Ruskin then points out “The foam is not cruel, neither does it crawl. The state of mind which attributes to it these characters of a living creature is one in which the reason is unhinged by grief.”

Yet Ruskin did not disapprove of Kingsley’s use of the pathetic fallacy:

“Now so long as we see that the feeling is true, we pardon, or are even pleased by, the confessed fallacy of sight which it induces: we are pleased, for instance, with those lines of Kingsley's, above quoted, not because they fallaciously describe foam, but because they faithfully describe sorrow.” (Ruskin, John (1856). "Of the Pathetic Fallacy". Modern Painters,. volume iii. pt. 4.) While Ruskin saw that indeed some uses of it were valid, he created the term in order to attack the sentimental over-use of it found in the poetry of the late 18th Century and which continued to flourish among Ruskin’s contemporaries.

The fashion may have begun to diminish just as Ruskin addressed the issue, but Ruskin was influential and is credited for helping refine poetic expression. (“Princeton Encyclopedia of Poetry and Poetics”, ed. Alex Preminger, Princeton University Press, 1974 ISBN 0-691-01317-9)

In 1927, H. W. Fowler in *A Dictionary of Modern English Usage* would note the phrase had been neglected by dictionaries, and that its meaning had shifted away from the one given to it originally. Although Fowler retains a mention of human emotion, an essential aspect in Ruskin, "[in] ordinary modern use pathos and pathetic are limited to the idea of painful emotion; but in this phrase, now common though little recognized in dictionaries, the original wider sense of emotion in general is reverted to, and... [pathetic fallacy] means the tendency to credit nature with human emotions."[4]

Fowler's description indicates that two significant alterations to the meaning have occurred. First, Ruskin intended that Pathetic Fallacy not be limited to ascribing human qualities, but any "untrue" quality: as an example of Pathetic Fallacy Ruskin quotes a poet describing a crocus as "gold" when the flower is, in fact, "saffron".[2] Secondly, Fowler removes the sense of "human emotion" as cause of a Pathetic Fallacy, and suggests that it is instead considered the "effect".

In 1971, M. H. Abrams, in *A Glossary of Literary Terms*, notes that the term has undergone a relative diminishment of form and defines pathetic fallacy as "a common phenomenon in descriptive poetry, in which the ascription of human traits to inanimate nature is less formally managed than in the figure called personification."[5]

With Abrams the evolution of meaning continued, and a lack of reference to Ruskin's original sense of either pathos or fallacy indicates a shift away from the original meaning is largely complete. "The pathos has largely gone out of the pathetic fallacy," says Jeffrey M. Hurwit, writing in *The Classical Journal* in 1982: "Today it is generally regarded simply as a variety of personification ... The pathetic fallacy is widely held to operate when there is any projection of human traits into nature or its animate or inanimate parts ... whatever the stimulus — passion, 'contemplative fancy,' or cold-blooded convention."[6]

In a drama of sufficient authenticity and power, Ruskin accepts the portrayal of pathetic fallacy by fictional characters. It is the disingenuous contrivance of the poet losing touch with reality, to which he objects.[6] In the narrow sense intended by Ruskin, only a faithful representation of experience, as it genuinely appears to the senses, escapes the pathetic fallacy. In addition to the "usual condition of prophetic inspiration," Ruskin defines three classes:

> The temperament which admits the pathetic fallacy, is, as I said above, that of a mind and body in some sort too weak to deal fully with what is before them or upon them; borne away, or over-clouded, or over-dazzled by emotion; and it is a more or less noble state, according to the force of the emotion which has induced it. For it is no credit to a man that he is not morbid or inaccurate in his perceptions, when he has no strength of feeling to warp them; and it is in general a sign of higher capacity and stand in the ranks of being, that the emotions should be strong enough to vanquish, partly, the intellect, and make it believe what they choose. But it is still a grander condition when the intellect also rises, till it is strong enough to assert its rule against, or together with, the utmost efforts of the passions; and the whole man stands in an iron glow, white hot, perhaps, but still strong, and in no wise evaporating ; even if he melts, losing none of his weight.
>
> So, then, we have the three ranks: the man who perceives rightly, because he does not feel, and to whom the primrose is very accurately the primrose, because he does not love it. Then, secondly, the man who perceives wrongly, because he feels, and to whom the primrose is anything else than a primrose: a star, or a sun, or a fairy's shield, or a forsaken maiden. And then, lastly, there is the man who perceives rightly in spite of his feelings, and to whom the primrose is for ever nothing else than itself—a little flower, apprehended in the very plain and leafy fact

> of it, whatever and how many soever the associations and passions may be, that crowd around it. And, in general, these three classes may be rated in comparative order, as the men who are not poets at all, and the poets of the second order, and the poets of the first; only however great a man may be, there are always some subjects which ought to throw him off his balance; some, by which his poor human capacity of thought should be conquered, and brought into the inaccurate and vague state of perception, so that the language of the highest inspiration becomes broken, obscure, and wild in metaphor, resembling that of the weaker man, overborne by weaker things.
>
> *— John Ruskin (1819–1900), Modern Painters, "Of the Pathetic Fallacy", volume iii, pt. 4, § 8.*

[edit]In legend

According to legend, when Xerxes was crossing the Hellespont in the midst of the first Greco-Persian War, he built two bridges that were quickly destroyed. Feeling personally offended, he let his paranoia lead him to believe that the sea was consciously acting against him as though it were an enemy. As such Herodotus quotes him as saying *"You salt and bitter stream, your master lays his punishment upon you for injuring him, who never injured you. Xerxes will cross you, with or without your permission"*.[7] He subsequently threw chains into the river, gave it three hundred lashes and *"branded it with red-hot irons"*.[8]

[edit]In literature and popular culture

Pathetic fallacy as an attribution of sentient, humanising traits to inanimate things is a centrally human way of understanding the world, and it does have a useful and important role in art and literature. Indeed, to reject the use of the pathetic fallacy would mean dismissing most Romantic poetry and many of Shakespeare's most memorable images. Literary critics find it useful to have a specific term for describing anthropomorphic tendencies in art and literature and so the phrase is currently used in a neutral sense. Josephine Miles in *Pathetic Fallacy in the Nineteenth Century: A Study of a Changing Relation Between Object and Emotion*, influenced by William Wordsworth’s discussion of the practice, argues that “pathetic bestowal” is a neutral and therefore preferable label. However labeled, the practice occurs in any number of accomplished twentieth-century writers, including William Carlos Williams, Theodore Roethke, Mary Oliver, Eavan Boland, and John Ashbery.

[edit]**Examples**

This stanza from Alfred Lord Tennyson’s 1855 poem “Maud”, is an example of what Ruskin saw as the fashion of contemporary poets to over-use pathetic fallacy:

There has fallen a splendid tear
  From the passion-flower at the gate.
She is coming, my dove, my dear;
  She is coming, my life, my fate.
The red rose cries, "She is near, she is near;"
  And the white rose weeps, "She is late;"

The larkspur listens, "I hear, I hear;"
And the lily whispers, "I wait." (Part 1, *XXII*, 10)

Whether or not Tennyson read Ruskin, ever since 1856, when Ruskin published his essay, Tennyson’s poems chart a continued refinement in his handling of personification. Here, for example, is one of Tennyson’s last poems written in 1889:

CROSSING THE BAR
Sunset and evening star,
And one clear call for me!
And may there be no moaning of the bar,
When I put out to sea,

But such a tide as moving seems asleep,
Too full for sound and foam,
When that which drew from out the boundless deep
Turns again home.

Twilight and evening bell,
And after that the dark!
And may there be no sadness of farewell,
When I embark;

For tho' from out our bourne of Time and Place
The flood may bear me far,
I hope to see my Pilot face to face
When I have crost the bar.

Other examples are:

- "The stars will awaken / Though the moon sleep a full hour later"—Percy Bysshe Shelley
- "The fruitful field / Laughs with abundance"—William Cowper
- "Nature must be gladsome when I was so happy"—*Jane Eyre*, by Charlotte Brontë

In the comic book series *Jack of Fables*, the Pathetic Fallacy itself is embodied by a character named Gary, who has control over inanimate objects and treats them with a peculiar sense of kindness.

[edit]In science

In science, pathetic fallacy occurs as a term peculiar to that field. Per the original meaning as coined by Ruskin, it is used pejoratively,[6] although not limited by Ruskin's criterion of *pathos*, it nonetheless revives the sense of an informal fallacy—to encourage literal communication in science, and to discourage figures of speech, that might convey an unintended false impression. An example is the phrase "Nature abhors a vacuum".

If pathetic fallacies are to be strictly and absolutely avoided, then explanations of natural phenomena should be free of the inappropriate modal force introduced by words like "want" or "try".[9] For example, "Air hates to be crowded, and when compressed it will try to escape to an area of lower pressure". However, such phenomena have no *conatus*—they strive for nothing, they simply do, or do not—they do not "try". The pressure exerted by a gas is explained by kinetic theory: movement towards lower pressure is due to the probability that unobstructed gas molecules will become more evenly distributed between high and low pressure zones by a net flow from the former to the latter. Elective proclivities have nothing to do with it.

Informally, however, scientists may still take advantage of the pathetic fallacy for quick and convenient metaphoric explanations of complex scientific concepts in a readily understood way.

[edit]See also

- Morgan's canon
- Animistic fallacy
- Figure of speech
- Pathos

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Thought-terminating cliché

Thought Reform and the Psychology of Totalism popularized the term "**thought-terminating cliché**". A thought-terminating cliché is a commonly used phrase, sometimes passing as folk wisdom, used to quell cognitive dissonance. Though the phrase in and of itself may be valid in certain contexts, its application as a means of dismissing dissent or justifying fallacious logic is what makes it thought-terminating.

Lifton said:[4][5]

The language of the totalist environment is characterized by the thought-terminating cliché. The most far-reaching and complex of human problems are compressed into brief, highly reductive, definitive-sounding phrases, easily memorized and easily expressed. These become the start and finish of any ideological analysis.

In George Orwell's novel *Nineteen Eighty-Four*, the fictional constructed language Newspeak is designed to reduce language entirely to a set of thought-terminating clichés. Aldous Huxley's *Brave New World* society uses thought-terminating clichés in a more conventional manner, most notably in regard to the drug *soma* as well as modified versions of real-life platitudes, such as, "A doctor a day keeps the jim-jams away." Hannah Arendt, in her 1963 book *Eichmann in Jerusalem*, describes Adolf Eichmann as an intelligent man using many of these thought-terminating clichés to justify his actions and the role he played in the Holocaust. For her, these phrases are symptomatic of an absence of thought.

Red herring fallacies

A red herring fallacy is an error in logic where a proposition is, or is intended to be, misleading in order to make irrelevant or false inferences. In the general case any logical inference based on fake arguments, intended to replace the lack of real arguments or to replace implicitly the subject of the discussion.
Red herring – argument given in response to another argument, which is irrelevant and draws attention away from the subject of argument. *See also irrelevant conclusion.*

- *Ad hominem* – attacking the arguer instead of the argument.
  - Poisoning the well – a type of *ad hominem* where adverse information about a target is presented with the intention of discrediting everything that the target person says[45]
  - Abusive fallacy – a subtype of "ad hominem" when it turns into name-calling rather than arguing about the originally proposed argument.
- *Argumentum ad baculum* (appeal to the stick, appeal to force, appeal to threat) – an argument made through coercion or threats of force to support position[46]
- *Argumentum ad populum* (appeal to widespread belief, bandwagon argument, appeal to the majority, appeal to the people) – where a proposition is claimed to be true or good solely because many people believe it to be so[47]
- Appeal to equality – where an assertion is deemed true or false based on an assumed pretense of equality.
- Association fallacy (guilt by association) – arguing that because two things share a property they are the same
- Appeal to authority – where an assertion is deemed true because of the position or authority of the person asserting it.[48][49]

  - Appeal to accomplishment – where an assertion is deemed true or false based on the accomplishments of the proposer.
- Appeal to consequences (*argumentum ad consequentiam*) – the conclusion is supported by a premise that asserts positive or negative consequences from some course of action in an attempt to distract from the initial discussion[50]
- Appeal to emotion – where an argument is made due to the manipulation of emotions, rather than the use of valid reasoning[51]
  - Appeal to fear – a specific type of appeal to emotion where an argument is made by increasing fear and prejudice towards the opposing side
  - Appeal to flattery – a specific type of appeal to emotion where an argument is made due to the use of flattery to gather support.[52]
  - Appeal to pity (*argumentum ad misericordiam*) – an argument attempts to induce pity to sway opponents[53]
  - Appeal to ridicule – an argument is made by presenting the opponent's argument in a way that makes it appear ridiculous
  - Appeal to spite – a specific type of appeal to emotion where an argument is made through exploiting people's bitterness or spite towards an opposing party
  - Wishful thinking – a specific type of appeal to emotion where a decision is made according to what might be pleasing to imagine, rather than according to evidence or reason.[54]
- Appeal to motive – where a premise is dismissed by calling into question the motives of its proposer
- Appeal to novelty (*argumentum ad novitam*) – where a proposal is claimed to be superior or better solely because it is new or modern.[55]
- Appeal to poverty (*argumentum ad Lazarum*) – supporting a conclusion because the arguer is poor (or refuting because the arguer is wealthy). (Opposite of appeal to wealth.)[56]
- Appeal to tradition (*argumentum ad antiquitam*) – a conclusion supported solely because it has long been held to be true.[57]
- Appeal to nature - wherein judgement is based solely on whether the subject of judgement is 'natural' or 'unnatural'.[*citation needed*] For example (hypothetical): "Cannabis is healthy because it is natural"
- Appeal to wealth (*argumentum ad crumenam*) – supporting a conclusion because the arguer is wealthy (or refuting because the arguer is poor).[58] (Sometimes taken together with the appeal to poverty as a general appeal to the arguer's financial situation.)
- Argument from silence (*argumentum ex silentio*) – a conclusion based on silence or lack of contrary evidence
- Chronological snobbery – where a thesis is deemed incorrect because it was commonly held when something else, clearly false, was also commonly held[*citation needed*]
- Genetic fallacy – where a conclusion is suggested based solely on something or someone's origin rather than its current meaning or context.[59]
- Judgmental language – insulting or pejorative language to influence the recipient's judgment
- Naturalistic fallacy (is–ought fallacy[60], naturalistic fallacy[61]) – claims about what ought to be on the basis of statements about what is.
- Psychogenetic Fallacy - inferring why an argument is being used, associating it to some psychological reason, then assuming it is invalid as a result. It is wrong to assume that if the origin of an idea comes from a biased mind, then the idea itself must also be a false. [32]
- *Reductio ad Hitlerum* (playing the Nazi card) – comparing an opponent or their argument to Hitler or Nazism in an attempt to associate a position with one that is universally reviled (See also –Godwin's law)
- Straw man – an argument based on misrepresentation of an opponent's position[62]
- Texas sharpshooter fallacy – improperly asserting a cause to explain a cluster of data[63]
- *Tu quoque* ("you too", appeal to hypocrisy) – the argument states that a certain position is false or wrong and/or should be disregarded because its proponent fails to act consistently in accordance with that position[64]
- Two wrongs make a right – occurs when it is assumed that if one wrong is committed, another wrong will cancel it out.[65]

Ignoratio elenchi

From Wikipedia, the free encyclopedia

Ignoratio elenchi, also known as **irrelevant conclusion**,[1] is the informal fallacy of presenting an argument that may or may not be logically valid, but fails nonetheless to address the issue in question.

Ignoratio elenchi falls into the broad class of relevance fallacies.[2] It is one of the fallacies identified by Aristotle in his *Organon*. In a broader sense he asserted that all fallacies are a form of*ignoratio elenchi*.[3][4]

Ignoratio Elenchi, according to Aristotle, is a fallacy which arises from “ignorance of the nature of refutation.” In order to refute an assertion, Aristotle says we must prove it's contradictory; the proof, consequently, of a proposition which stood in any other relation than that to the original, would be an *ignoratio elenchi*… Since Aristotle, the scope of the fallacy has been extended to include all cases of proving the wrong point… “I am required to prove a certain conclusion; I prove, not that, but one which is likely to be mistaken for it; in that lies the fallacy… For instance, instead of proving that ‘this person has committed an atrocious fraud,’ you prove that ‘this fraud he is accused of is atrocious;’” … The nature of the fallacy, then, consists in substituting for a certain issue another which is more or less closely related to it, and arguing the substituted issue. The fallacy does not take into account whether the arguments do or do not really support the substituted issue, it only calls attention to the fact that they do not constitute a proof of the original one… It is a particularly prevalent and subtle fallacy and it assumes a great variety of forms. But whenever it occurs and whatever form it takes, it is brought about by an assumption that leads the person guilty of it to substitute for a definite subject of inquiry another which is in close relation with it.[5]

—Arthur Ernest Davies, *"Fallacies" in A Text-Book of Logic*

The phrase *ignoratio elenchi* is Latin meaning "ignorance of refutation". Here *elenchi* is the genitive singular of the Latin noun *elenchus*, which is from the Greek ἔλεγχος *elenchos*, meaning an argument of disproof or refutation.[6] The translation in English of the Latin expression has varied a fair bit. Hamblin proposed "misconception of refutation" or "ignorance of refutation" as a literal translation,[7] Oesterle preferred "ignoring the issue",[7] Irving Copi, Christopher Tindale and others used "irrelevant conclusion".[7][8]

An example might be a situation where A and B are debating whether the law permits A to do something. If A attempts to support his position with an argument that the law *ought* to allow him to do the thing in question, then he is guilty of *ignoratio elenchi*.[9] Dr Johnson's unique "refutation" of Bishop Berkeley's immaterialism, his claim that matter did not actually exist but only seemed to exist,[10] has been described as *Ignoratio elenchi*:[11] during a conversation with Boswell, Johnson powerfully kicked a nearby stone and proclaimed of Berkeley's theory, "I refute it *thus*!"[12]

A related concept is that of the red herring, which is a deliberate attempt to divert a process of enquiry by changing the subject.[2] Ignoratio elenchi is sometimes confused with straw manargument.[2] For example, it has been described as "attacking what the other fellow never said" by Peter Jay in an article in a 1996 article in New Statesman.[13][*verification needed*]

[edit]See also

- *Ad hominem*
- Chewbacca defense
- Enthymeme
- *Non sequitur* (logic)
- *Reductio ad Hitlerum*
- Sophism
- Red herring
- Straw man
- List of fallacies

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[edit]External links

Look up ***red herring*** in Wiktionary, the free dictionary.

- Appeal to Authority Breakdown, Examples, Definitions, & More
- Nizkor Project: Red Herring
- Fallacy Files: Red Herring
- The Phrase Finder: Red Herring
- The Art of Controversy: Diversion (bilingual with the original German) by Arthur Schopenhauer
- Red herring in political speech
- Ignoratio Elechi on TV Tropes

Ad hominem

From Wikipedia, the free encyclopedia

"Personal attacks" redirects here. For the Wikipedia policy, see Wikipedia:No personal attacks.

An ***ad hominem*** (Latin for "to the man"), short for ***argumentum ad hominem***, is an argument made personally against an opponent instead of against their argument.[1] *Ad hominem* reasoning is normally described as an informal fallacy,[2][3][4] more precisely an irrelevance.[5]

Contents

[hide]

1 Types
  ○ 1.1 Abusive
  ○ 1.2 Circumstantial
  ○ 1.3 Ad feminam/Ad hominem
  ○ 1.4 Tu quoque
  ○ 1.5 Guilt by association
2 Halo effect
3 Questions about the notion of an *ad hominem* fallacy
4 See also
5 References
6 Further reading
7 External links

[edit]Types

See also: List of fallacies

[edit]Abusive

Abusive *ad hominem* (also called "personal abuse" or "personal attacks") usually involves insulting or belittling an opponent in order to attack their claims or invalidate their arguments, but can also involve pointing out true character flaws or actions irrelevant to the opponent's argument. Equating someone's character with the soundness of their argument is a logical fallacy. Mere verbal abuse in the absence of an argument, however, is not *ad hominem* nor any kind of logical fallacy.[6]

Examples:

- "The Mayoral candidate's proposal about zoning is ridiculous. He was caught cheating on his taxes in 2003."
- "What makes you so smart and all-knowing that you can deny God's existence? You haven't even finished school."
- "If Dr. Smith is such a skilled heart surgeon, then why was he arrested for gambling?"
- "Your fashion opinion isn't valid; you can't even afford new shoes."

Ad hominem abuse is not to be confused with slander or libel, which employ falsehoods and are not necessarily leveled to undermine otherwise sound stands with character attacks.

[edit]Circumstantial

Ad hominem circumstantial points out that someone is in circumstances such that they are disposed to take a particular position. *Ad hominem* circumstantial constitutes an attack on the bias of a source. This is fallacious because a disposition to make a certain argument does not make the argument false; this overlaps with the genetic fallacy (an argument that a claim is incorrect due to its source).[7]

The circumstantial fallacy applies only where the source taking a position is only making a logical argument from premises that are generally accepted. Where the source seeks to convince an audience of the truth of a premise by a claim of authority or by personal observation, observation of their circumstances may reduce the evidentiary weight of the claims, sometimes to zero.[8]

Examples:

Mandy Rice-Davies's famous testimony during the Profumo Affair, "Well, he would [say that], wouldn't he?", is an example of a valid circumstantial argument. Her point was that a man in a prominent position, accused of an affair with a callgirl, would deny the claim whether it was true or false. His denial, in itself, carries little evidential weight against the claim of an affair. Note, however, that this argument is valid only insofar as it devalues the denial; it does *not* bolster the original claim. To construe evidentiary invalidation of the denial as evidentiary validation of the original claim is fallacious (on several different bases, including that of *argumentum ad hominem*); however likely the man in question would be to deny an affair that did in fact happen, he could only be more likely to deny an affair that never happened.

Conflict of Interest: Where a source seeks to convince by a claim of authority or by personal observation, identification of conflicts of interest are not *ad hominem* – it is generally well accepted that an "authority" needs to be objective and impartial, and that an audience can only evaluate information from a source if they know about conflicts of interest that may affect the objectivity of the source. Identification of a conflict of interest is appropriate, and concealment of a conflict of interest is a problem.

[edit]Ad feminam/Ad hominem

An ***ad feminam*** is an ad hominem attack, used in attempt to defeat a woman's argument.[9] An example would be the response "Is it your time of the month?" to a woman making an argument. The term is most frequently used in this sense in feminist philosophy, to note systemic tendencies to discredit opinions of women. As such, it is similar in nature and purpose to such feminist neologisms as "herstory". Quotes:

- "Ahmad's characteristic method here of reductive *ad hominem* and *ad feminam* critique subverts his accompanying claim to Marxist subjectivity..." [10]
- "Almost any *ad hominem* (or in this case, *ad feminam*) response such as this one invalidates the content of the patient's viewpoint" [11]

In Latin, the word *homō* (of which *hominem* is the accusative case) has the gender-neutral meaning of "a human being", "a person" (unlike the words in Romance languages it gave rise to, such asFrench *homme* and Italian *uomo*). A translation of *ad hominem* that preserves this gender-neutrality is "to the person". In contrast, *ad feminam* is gender-specific and used to describe attacks on women as women or because they are women.[12]

[edit]Tu quoque

Main article: Tu quoque

Ad hominem *tu quoque* (literally: "You also") refers to a claim that the source making the argument has spoken or acted in a way inconsistent with the argument. In particular, if Source A criticizes the actions of Source B, a *tu quoque* response is that Source A has acted in the same way. This argument is fallacious because it does not disprove the argument; if the premise is true then Source A may be a hypocrite, but this does not make the statement less credible from a logical perspective. Indeed, Source A may be in a position to provide personal testimony to support the argument.

For example, a father may tell his son not to start smoking as he will regret it when he is older, and the son may point out that his father is or was a smoker. This does not alter the fact that his son may regret smoking when he is older.

[edit]Guilt by association

Main article: Association fallacy

Guilt by association can sometimes also be a type of *ad hominem* fallacy if the argument attacks a source because of the similarity between the views of someone making an argument and other proponents of the argument.[7]

This form of the argument is as follows:

1. Source S makes claim C.
2. Group G, which is currently viewed negatively by the recipient, also makes claim C.
3. Therefore, source S is viewed by the recipient of the claim as associated to the group G and inherits how negatively viewed it is.

[edit]Halo effect

See also; List of cognitive biases

Ad hominem arguments work via the halo effect, a human cognitive bias in which the perception of one trait is influenced by the perception of an unrelated trait, *e.g.* treating an attractive person as more intelligent or more honest. People tend to see others as tending to all good or tending to all bad. Thus, if you can attribute a bad trait to your opponent, others will tend to doubt the quality of their arguments, even if the bad trait is irrelevant to the arguments.

[edit]Questions about the notion of an *ad hominem* fallacy

Doug Walton, Canadian academic and author, has argued that *ad hominem* reasoning is not always fallacious, and that in some instances, questions of personal conduct, character, motives, etc., are legitimate and relevant to the issue,[13] as when it directly involves hypocrisy, or actions contradicting the subject's words.

The philosopher Charles Taylor has argued that *ad hominem* reasoning is essential to understanding certain moral issues, and contrasts this sort of reasoning with the apodictic reasoning ofphilosophical naturalism.[14]

Olavo de Carvalho, Brazilian philosopher, has argued that *ad hominem* reasoning not only has rhetorical, but also logical value. As an example, he cites Karl Marx's idea that only the proletariat has an objective view of history. If that were to be taken rigorously, an *ad hominem* argument would effectively render Marx's general theory as incoherent: as Marx was not a proletarian, his own view of history couldn't be objective.

[edit]See also

- And you are lynching Negroes
- Appeal to authority
- Association fallacy
- Character assassination

- Credibility
- Discrediting tactic
- Fair Game (Scientology)
- Fundamental attribution error
- Hostile witness
- List of logical fallacies
- Negative campaigning
- Poisoning the well
- Reputation
- Self-hating Jew
- Shooting the messenger

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[edit]External links

Look up *ad hominem* in Wiktionary, the free dictionary.

- Ad hominem at PhilPapers
- Nizkor.org: Fallacy: Ad Hominem.
- Nizkor.org: Fallacy: Circumstantial Ad Hominem.
- Argumentum Ad Hominem
- University of Winnipeg: Argumentation Schemes and Historical Origins of the Circumstantial Ad Hominen Argument PDF (70.2 KB)
- Logical Fallacies: Ad Hominem
- Mission Critical: Introduction to Ad Hominem Fallacies

Bullying

From Wikipedia, the free encyclopedia

For the Wikipedia guidance essay, see Wikipedia:WikiBullying

Bullying is detrimental to students' well-being and development.[1]

Bullying is the use of force or coercion to abuse or intimidate others. The behavior can be habitual and involve an imbalance of social or physical power. It can include verbal harassment or threat, physical assault or coercion and may be directed repeatedly towards particular victims, perhaps on grounds of race, religion, gender, sexuality, or ability.[2][3] If bullying is done by a group, it is called mobbing. The victim of bullying is sometimes referred to as a "target".

Bullying can be defined in many different ways. The UK currently has no legal definition of bullying,[4] while some U.S. states have laws against it.[5]Bullying consists of three basic types of abuse – emotional, verbal, and physical. It typically involves subtle methods of coercion such as intimidation.

Bullying ranges from simple one-on-one bullying to more complex bullying in which the bully may have one or more "lieutenants" who may seem to be willing to assist the primary bully in his or her bullying activities. Bullying in school and the workplace is also referred to as peer abuse.[6] Robert W. Fuller has analyzed bullying in the context of rankism.

Bullying can occur in any context in which human beings interact with each other. This includes school, church, family, the workplace, home, and neighborhoods.

Happy slapping in theInstituto Regional Federico Errázuriz, Santa Cruz, Chile

Contents

[hide]

- 1 Definitions and etymology
  - ○ 1.1 Definitions
  - ○ 1.2 Etymology
- 2 History
  - ○ 2.1 Anti-bullying movement
- 3 Characteristics
  - ○ 3.1 Of bullying in general
  - ○ 3.2 Of bullies and bully accomplices
  - ○ 3.3 Of typical bystanders
  - ○ 3.4 Of targets
    - ■ 3.4.1 Effects of bullying on those who are targeted
      - ■ 3.4.1.1 Suicide
      - ■ 3.4.1.2 Violence
      - ■ 3.4.1.3 Positive development
- 4 Intervention
- 5 Chronic bullying cycle
- 6 Bullying in different contexts
  - ○ 6.1 Cyberbullying
  - ○ 6.2 Disability bullying
  - ○ 6.3 Gay bullying
  - ○ 6.4 Military bullying
  - ○ 6.5 Prison bullying
  - ○ 6.6 School bullying

- 6.7 Sexual bullying
- 6.8 Workplace bullying
  - 6.8.1 In academia
  - 6.8.2 In blue collar jobs
  - 6.8.3 In information technology
  - 6.8.4 In medicine
  - 6.8.5 In nursing
  - 6.8.6 In teaching
- 6.9 In other areas

7 See also

8 References

9 Further reading

10 External links

Definitions and etymology

Definitions

Bullying may be defined as the activity of repeated, aggressive behavior intended to hurt another person, physically or mentally. Bullying is characterized by an individual behaving in a certain way to gain power over another person.[7]

Norwegian researcher Dan Olweus[8] says bullying occurs when a person is:

'exposed, repeatedly and over time, to negative actions on the part of one or more other persons'. He says negative actions occur 'when a person intentionally inflicts injury or discomfort upon another person, through physical contact, through words or in other ways.'[*citation needed*]

Etymology

The word "bully" was first used in the 1530s meaning "sweetheart", applied to either sex, from the Dutch *boel* "lover, brother", probably diminutive of Middle High German *buole* "brother", of uncertain origin (compare with the German *buhle* "lover"). The meaning deteriorated through the 17th century through "fine fellow", "blusterer", to "harasser of the weak". This may have been as a connecting sense between "lover" and "ruffian" as in "protector of a prostitute", which was one sense of "bully" (though not specifically attested until 1706). The verb "to bully" is first attested in 1710.[9]

History

High-level forms of violence such as assault and murder usually receive most media attention, but lower-level forms of violence such as bullying have only in recent years started to be addressed by researchers, parents and guardians, and authority figures.[10] It is only in recent years that bullying has been recognised and recorded as a separate and distinct offence, but there have been well documented cases that have been recorded over the centuries. The Fifth Volume of the Newgate Calendar[11] contains at least one example where Eton Scholars George Alexander Wood and Alexander Wellesley Leith were charged, at Aylesbury Assizes, with killing and slaying the Hon. F. Ashley Cooper on February 28, 1825 in an incident which might today be described as "lethal hazing".[12] The Newgate calendar contains several other examples that, while not as distinct, could be considered indicative of situations of bullying. Virginia Woolf considered fascism to be a form of bullying, and wrote of Hitler and the Nazis in 1934 as "these brutal bullies".[13][14]

Anti-bullying movement

In the 2000s and 2010s, a cultural movement against bullying gained popularity in the English-speaking world. The first National Bullying Prevention Week was conceived of in Canada in 2000 by Canadian educator and anti-bullying activist Bill Belsey. The charity Act Against Bullying was formed in the UK in 2003. In 2006, National Bullying Prevention Month was declared in the United States. The Suicide of Phoebe Prince in 2010 brought attention to the issue in Massachusetts, and sparked reforms in state education. The It Gets Better Project was started in 2010 to combat gay teen suicides, and Lady Gaga announced the Born This Way Foundation in partnership with Harvard's Berkman Center for Internet & Society in 2011.

A 2012 paper from the Berkman Center, “An Overview of State Anti-Bullying Legislation and Other Related Laws,” notes that, as of January 2012, 48 U.S. states had anti-bullying laws, though there is wide variation in their strength and focus. Sixteen states acknowledge that bullies often target their victims based on “creed or religion, disability, gender or sex, nationality or national origin, race, and sexual orientation.” Each of the 16 employs a wide array of additional parameters, the paper notes, ranging from age and weight to socioeconomic status. Of the 38 states that have laws encompassing electronic or “cyberbullying” activity, 32 put such offenses under the broader category of bullying and six states define this type of offense separately, the authors report.[15]

Characteristics

Of bullying in general

Bullying consists of three basic types of abuse – emotional, verbal, and physical. It typically involves subtle methods of coercion such as intimidation. Bullying behavior may include name calling,verbal or written abuse, exclusion from activities, exclusion from social situations, physical abuse, or coercion.[10][16]

U.S. National Center for Education Statistics suggests that bullying can be classified into two categories:

1. direct bullying, and
2. indirect bullying (which is also known as social aggression).[1]

Ross states that direct bullying involves a great deal of physical aggression, such as shoving and poking, throwing things, slapping, choking, punching and kicking, beating, stabbing, pulling hair, scratching, biting, scraping, and pinching.[17]

He also suggests that social aggression or indirect bullying is characterized by attempting to socially isolate the victim. This isolation is achieved through a wide variety of techniques, including spreading gossip, refusing to socialize with the victim, bullying other people who wish to socialize with the victim, and criticizing the victim's manner of dress and other socially-significant markers (including the victim's race, religion, disability, sex, or sexual preference, etc.). Ross[17] outlines an array of nonviolent behavior which can be considered "indirect bullying", at least in some instances, such as name calling, the silent treatment, arguing others into submission, manipulation, gossip/false gossip, lies, rumors/false rumors, staring, giggling, laughing at the victim, saying certain words that trigger a reaction from a past event, and mocking. The UK based children's charity, Act Against Bullying, was set up in 2003 to help children who were victims of this type of bullying by researching and publishing coping skills.

It has been noted that there tend to be differences in how bullying manifests itself between the sexes. Males tend to be more likely to be physically aggressive whereas females tend to favourexclusion and mockery, though it has been noticed that females are becoming more physical in their bullying.[7] There can be a tendency in both sexes to opt for exclusion and mockery rather than physical aggression when the victim is perceived to be too strong to attack without risk, or the use of violence would otherwise cause problems for the bullies such as criminal liability, or the bullies see physical aggression as immature (particularly when bullying occurs among adults).[*citation needed*]

Clayton R. Cook and co-authors from the University of California at Riverside examined 153 studies from the last 30 years. They found that boys bully more than girls, and bullies and victims both have poor social problem-solving skills. More than anything else, poor academic performance predicts those who will bully.[18]

Of bullies and bully accomplices

Studies have shown that envy and resentment may be motives for bullying.[19] Research on the self-esteem of bullies has produced equivocal results.[20][21] While some bullies are arrogant andnarcissistic,[22] bullies can also use bullying as a tool to conceal shame or anxiety or to boost self-esteem: by demeaning others, the abuser feels empowered.[23] Bullies may bully out ofjealousy or because they themselves are bullied.[24] Some have argued that a bully reflects the environment of his home, repeating the model he learned from his parents.[25]

Researchers have identified other risk factors such as depression[26] and personality disorders,[27] as well as quickness to anger and use of force, addiction to aggressive behaviors, mistaking others' actions as hostile, concern with preserving self image, and engaging in obsessive or rigid actions.[28] A combination of these factors may also be causes of this behavior.[29] In one recent study of youth, a combination of antisocial traits and depression was found to be the best predictor of youth violence, whereas video game violence and television violence exposure were not predictive of these behaviors.[30]

According to some researchers, bullies may be inclined toward negativity and perform poorly academically. Dr. Cook says that "a typical bully has trouble resolving problems with others and also has trouble academically. He or she usually has negative attitudes and beliefs about others, feels negatively toward himself/herself, comes from a family environment characterized by conflict and poor parenting, perceives school as negative and is negatively influenced by peers".[18]

Contrarily, some researchers have suggested that some bullies are "psychologically strongest" and have "high social standing" among their peers, while their victims are "emotionally distressed" and "socially marginalized".[31] Other researchers also argued that a minority of the bullies, those who are not in turn bullied, "enjoy going to school, and are least likely to take days off sick".[32]

It is often suggested that bullying behavior has its origin in childhood. As a child who is inclined to act as a bully ages, his or her related behavior patterns may also become more sophisticated. Schoolyard pranks and "rough-housing" may develop into more subtle activities such as administrative end-runs, planned and orchestrated attempts at character assassination, or other less obvious, yet equally forceful forms of coercion.[*citation needed*]

Research indicates that adults who bully have authoritarian personalities, combined with a strong need to control or dominate.[33] It has also been suggested that a prejudicial view of subordinates can be a particularly strong risk factor.[34]

Of typical bystanders

Often bullying takes place in the presence of a large group of relatively uninvolved bystanders. In many cases, it is the bully's ability to create the illusion that he or she has the support of the majority present that instills the fear of "speaking out" in protestation of the bullying activities being observed by the group. Unless the "bully mentality" is effectively challenged in any given group in its early stages, it often becomes an accepted, or supported, norm within the group.[35] [36]

In such groups where the "bully mentality" has been allowed to become a dominant factor in the group environment, injustice and abuse often become regular and predictable parts of the group experience. Bystanders to bullying activities are often unable or unwilling to recognize the true costs that silence regarding the bullying can have, both to the victim or victims, and to the group. Bystanders often feel unwilling to empathize with the victim, regardless of their feelings towards the bully. The reversal of a culture of bullying within a group is usually an effort which requires much time, energy, careful planning, coordination with others, and usually requires some undertaking of "risk" by group members.[*citation needed*]

It is the general unwillingness of bystanders to expend these types of energies and to undertake this type of risk that bullies often rely upon in order to maintain their power. Unless action is taken, a "culture of bullying" is often perpetuated within a group for months, years, or longer.[37] [38]

Bystanders who have been able to establish their own "friendship group" or "support group" have been found to be far more likely to opt to speak out against bullying behavior than those who have not.[39] [40]

Of targets

Dr. Cook says that "A typical victim is likely to be aggressive, lack social skills, think negative thoughts, experience difficulties in solving social problems, come from a negative family, school and community environments and be noticeably rejected and isolated by peers".[18]

Effects of bullying on those who are targeted

Mona O'Moore of the Anti-Bullying Centre at Trinity College in Dublin, has written, "There is a growing body of research which indicates that individuals, whether child or adult, who are persistently subjected to abusive behavior are at risk of stress related illness which can sometimes lead to suicide".[41] Those who have been the targets of bullying can suffer from long term emotional and behavioral problems. Bullying can cause loneliness, depression, anxiety, lead to low self-esteem and increased susceptibility to illness.[42] In the long term it can lead to posttraumatic stress disorder and an inability to form relationships.[*citation needed*]

Suicide

Main article: Bullycide

There is evidence that bullying increases the risk of suicide.[43] It is estimated that between 15 and 25 children commit suicide every year in the UK alone, because they are being bullied.[44]

Among the cases of media bullying suicides following: Ryan Halligen, Phoebe Prince, Dawn-Marie Wesley, Kelly Yeomans, Jessica Haffer,[45] Hamed Nastoh,[46] or April Himes.[47]

Violence

Bullied students Eric Harris and Dylan Klebold carried out the 1999 Columbine High School massacre. Since then, bullying has been more closely linked to high school violence in general.[48]

Positive development

Some have argued that bullying can teach life lessons and instil strength. Helene Guldberg, a child development academic, sparked controversy when she argued that being a victim of bullying can teach a child "how to manage disputes and boost their ability to interact with others", and that teachers should not intervene, but leave children to respond to the bullying themselves:[49]

> "[I]f boys or girls are able to stand up for themselves, being attacked by enemies can help their development. Studies have shown that children become more popular among, and

> respected by, teachers and fellow pupils if they repay hostility in kind. They remember such experiences more vividly than friendly episodes, helping them to develop healthy social and emotional skills".[50]

Despite occasional assertions that bullying can be positive and even productive, the avowed normative consensus is that bullying is a form of abuse and is wholly negative. Most victims report bullying as something that scars them for a long time, and sometimes as a fundamental and negative factor in the development of their adult personality.[*citation needed*]

Intervention

Despite the large number of individuals who do not approve of bullying, there are very few who will intervene on behalf of a victim. Most people remain bystanders, and may accept the bullying or even support the bully. In 85% of bullying incidents, bystanders are involved in teasing the victim or egging on the bully.[51] When the bully encounters no negative response from observers, it encourages continuation of the behavior.[52]

There are many reasons why individuals choose not to intervene. They may be relieved that the victim of a normal and generally-present danger is someone else, they may take vicarioussatisfaction in the bullying, or they may worry that they risk becoming the next victim through intervention. An intuitive understanding that others will be similarly unwilling to assist them if they do become the next victim likely strengthens the motivation to remain passive.[*citation needed*]

Researchers have been considered the just-world belief theory to explore a posited decline in anti-bullying attitudes. "This is the idea that people get what they deserve and deserve what they get". The study determined that children do seek to understand, justify, and rectify the different injustices they come across in everyday life. However, further research is needed to link the two together.[51]

Chronic bullying cycle

While on the surface, chronic bullying may appear to be simply the actions of an "aggressor" (or aggressors) perpetrated upon an unwilling "targeted individual" (or individuals), on a certain deeper level, for it to succeed, the bullying-cycle must also be viewed as necessarily including a certain chronic inadequate response on the part of the target (or targets). That is, a response that is seen by both the bully and the target as insufficient to prevent the chronic bullying-cycle from repeating itself between the given individuals. A suitable response to any given attempt at bullying varies with the occasion, and can range from ignoring a bully to turning a prank around so that it makes a "pranksteree" out of the would be prankster,[53] to even summoning legal intervention. In any case, the targeted individual must necessarily somehow demonstrate to the would-be bully that one will not allow one's self to be daunted, intimidated, or otherwise "cowed" by the bully. Those individuals or groups who are capable of reacting to initial bullying attempts in ways that tend to sufficiently discourage potential bullies from repeated attempts are less likely to be drawn into this destructive cycle. Those individuals or groups who most readily react to stressful situations by perceiving themselves as "victims" tend to make the most suitable candidates for becoming the "targets" of chronic bullying.[54]

Under some circumstances, targets may be chosen in what may be a completely random or arbitrary process, especially in groups in which the "bully mentality" may have already succeeded in achieving domination within the group. In such groups, the defense mechanisms of the entire group may have already been "broken down", and therefore the targeting of individuals no longer requires the seeking out of "certain personality types" to become the "next target". The reversal of such chronic and well entrenched bullying behavior in such groups sometimes requires a much more carefully planned, coordinated, determined, and multi-individual response from a would-be target than in a group in which either the "bully mentality" may not (yet) prevail, or ideally in a group that may have already taken a pro-active preventative approach towards bullying.[55] [56]

Typically, the bullying-cycle must include both an act of aggression on the part of a potential bully, and a response by a potential target that is perceived by both as a certain sign of submission. The cycle is only set in motion when both of these two essential elements are present. Once both of these two elements manifest themselves, the bullying cycle often proceeds to feed on itself over time, and may last for months, years, or even decades. The cycle is most easily broken at its initial onset; however, it can also be broken at any later point in its progression by simply removing either one of its two essential ingredients. While group involvement may seem to complicate bullying activities, the act is most often an implied agreement in principle between a chief bully or instigator and the target that the one has "submitted" to the other. In the act of bullying, the bully attempts to make a public statement to the effect of: "See me and fear me, I am so powerful that I have the ability to inflict pain upon the intended target at the time and manner of my choice without having to pay any consequences". Should an intended target exhibit a "defeated attitude" in response to chronic bullying, then the bullying is likely to continue. In circumstances where a "bullying pattern" has not yet fully established itself, should the intended target respond with a clear attitude of self-confidence that somehow demonstrates that the bully's attempt to dominate is futile, then the bullying attempt will often quickly diminish or end all-together. Established patterns of bullying may require greater and more persistent effort to reverse. Institutions and organs of society often reinforce bullying, often by implying to or telling targets of bullies that they are responsible for defending themselves, and then punishing victims if they fight back. [57] [58]

Bullying in different contexts

Cyberbullying

Main article: Cyberbullying

Cyber-bullying is any bullying done through the use of technology. This form of bullying can easily go undetected because of lack of parental/authoritative supervision. Because bullies can pose as someone else, it is the most anonymous form of bullying. Cyber bullying includes, but is not limited to, abuse using email, instant messaging, text messaging, websites, social networking sites, etc.[59] Particular watch dog organizations have been designed to contain the spread of cyber-bullying.[*citation needed*]

Disability bullying

Main article: Disability bullying

It has been noted that disabled people are disproportionately affected by bullying and abuse, and such activity has been cited as a hate crime.[60] The bullying is not limited to those who are visibly disabled such as wheelchair-users or physically deformed such as those with a cleft lip but also those with learning disabilities such as autism[61][62] and dyspraxia[63][64] In the latter case, this is linked to a poor ability in physical education, and this behaviour can be encouraged by the unthinking physical education teacher. Abuse of the disabled is not limited to schools. There are many known cases in which the disabled have been abused by staff of a "care institution", such as the case revealed in a BBC Panorama programme on a Castlebeck care home (Winterbourne View) near Bristol which led to its closure and the suspension and sacking of some of the staff.[65]

There is an additional problem that those with learning disabilities are often not as able to explain things to other people so are more likely to be disbelieved or ignored if they do complain.

Gay bullying

Main article: Gay bullying

Gay bullying and gay bashing are expressions used to designate verbal or physical actions that are direct or indirect in nature by a person or group against a person who is gay, lesbian, bisexual,transgendered (LGBT), or of questionable sexual orientation, or one who is perceived to be so, because of rumors or fitting gay stereotypes.

In eastern countries like India and China, to bully the person people spit in his way, yell silently and show a hand gesture to say "go away" diplomatically.[*citation needed*]

Military bullying

Main article: Bullying in the military

In 2000, the UK Ministry of Defence (MOD) defined bullying as: “...the use of physical strength or the abuse of authority to intimidate or victimize others, or to give unlawful punishments.”[66]

Some argue that this behaviour should be allowed, due to ways in which "soldiering" is different from other occupations. Soldiers expected to risk their lives should, according to them, develop strength of body and spirit to accept bullying.[67] This attitude can be seen as paralleled by the training expected by the Ancient Greek city state of Sparta.[citation needed]

However, the role of a soldier has widened to peace-keeping where overt aggression is usually counterproductive and services auxiliary to the military often do some soldiering as well as another role such as engineering.[citation needed]

Prison bullying

Main article: Prisoner abuse

Another environment known for bullying is a country's prison service. This is almost inevitable when many of the people incarcerated are there for aggressive crimes and many were bullies at school. An additional complication is the staff and their relationships with the inmates. Thus the following possible bullying scenarios are possible:

- Inmate bullies inmate (echoing school bullying);
- Staff bullies inmate;
- Staff bullies staff (a manifestation of workplace bullying);
- Inmate bullies staff.

School bullying

Main article: School bullying

Bullying can occur in nearly any part in or around the school building, though it may occur more frequently in physical education classes and activities, recess, hallways, bathrooms, on school buses and while waiting for buses, and in classes that require group work and/or after school activities. Bullying in school sometimes consists of a group of students taking advantage of or isolating one student in particular and gaining the loyalty of bystanders who want to avoid becoming the next victim. These bullies may taunt and tease their target before physically bullying the target. Bystanders may participate or watch, sometimes out of fear of becoming the next victim.

Bullying can also be perpetrated by teachers, administrators, and the school system itself: There is an inherent power differential in the system that can easily predispose to subtle or covert abuse (relational aggression or passive aggression), power harassment, humiliation, or exclusion — even while maintaining overt commitments to anti-bullying policies.[68][69][70]

Sexual bullying

Main article: Sexual bullying

Sexual bullying is "any bullying behaviour, whether physical or non-physical, that is based on a person's sexuality or gender. It is when sexuality or gender is used as a weapon by boys or girls towards other boys or girls - although it is more commonly directed at girls. It can be carried out to a person's face, behind their back or through the use of technology."[71]

Workplace bullying

Main article: Workplace bullying

According to the Workplace Bullying and Trauma Institute workplace bullying is "repeated, health-harming mistreatment, verbal abuse, or conduct which is threatening, humiliating, intimidating, orsabotage that interferes with work, or some combination of the three".[72] Statistics show that bullying is 3 times as prevalent as illegal discrimination and at least 1,600 times as prevalent asworkplace violence. Statistics also show that while only one employee in every 10,000 becomes a victim of workplace violence, one in six experiences bullying at work. Bullying is a little more common than sexual harassment but not verbal abuse which occurs more than bullying.

Unlike the more physical form of school bullying, workplace bullying often takes place within the established rules and policies of the organization and society. Such actions are not necessarily illegal and may not even be against the firm's regulations; however, the damage to the targeted employee and to workplace morale is obvious.

In academia

Main article: Bullying in academia

Bullying in academia is workplace bullying of scholars and staff in academia, especially places of higher education such as colleges and universities. It is believed to be common, although has not received as much attention from researchers as bullying in some other contexts.[73]

In blue collar jobs

Bullying has been identified as prominent in blue collar jobs including on the oil rigs and in mechanic shops and machine shops. It is thought that intimidation and fear of retribution cause decreased incident reports. This is also an industry dominated by males, typically of little education, where disclosure of incidents are seen as effeminate, which, in the socioeconomic and cultural milieu of such industries, would likely lead to a vicious circle. This is often used in combination with manipulation and coercion of facts to gain favour among higher rankingadministrators.[74]

In information technology

Main article: Bullying in information technology

A culture of bullying is common in information technology (IT), leading to high sickness rates, low morale, poor productivity, and high staff turnover.[75] Deadline-driven project work and stressed-out managers take their toll on IT workers.[76]

In medicine

Main article: Bullying in medicine

Bullying in the medical profession is common, particularly of student or trainee doctors and of nurses. It is thought that this is at least in part an outcome of conservative traditional hierarchical structures and teaching methods in the medical profession, which may result in a bullying cycle.

In nursing

Main article: Bullying in nursing

Bullying has been identified as being particularly prevalent in the nursing profession although the reasons are not clear. It is thought that relational aggression (psychological aspects of bullying such as gossipping and intimidation) are relevant. Relational aggression has been studied amongst girls but not so much amongst adult women.[77][78]

In teaching

Main article: Bullying in teaching

School teachers are commonly the subject of bullying but they are also sometimes the originators of bullying within a school environment.

In other areas

As the verb *to bully* is defined as simply "forcing one's way aggressively or by intimidation", the term may generally apply to *any* life experience where one is motivated primarily by intimidation instead of by more positive goals such as mutually shared interests and benefits. As such, any figure of authority or power which may use intimidation as a primary means of motivating others, such as a neighborhood "protection racket don", a national dictator, a childhood ring-leader, a terrorist, a terrorist organization, or even a ruthless business CEO, could rightfully be referred to as a bully. According to psychologist Pauline Rennie-Peyton, we each face the possibility of being bullied in any phase of our lives.[79]

See also

- *The Bully: A Discussion and Activity Story* (book)
- Abuse
- Complex post-traumatic stress disorder
- Bullycide
- Happy slapping

- Hate crime
- Hazing
- Mobbing
- Passive aggression
- Psychological manipulation
- Psychological trauma
- Relational aggression
- Scapegoating
- School violence
- Social exclusion
- Social isolation
- Social undermining
- Taunting
- Teasing
- *The Twisted Sisterhood: Unraveling the Dark Legacy of Female Friendships* (book)
- Victim blaming
- Victim playing
- Victimisation

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External links

Look up ***bullying*** in Wiktionary, the free dictionary.

- Bullying. No Way! (Australian Education Authorities)
- Bullying in schools (UK – schools)
- PBSKids.org "Great Books About Bullies"
- Be Brave Against Bullying, a UFT project
- U.S. Department of Education's Education Resources Information Center (ERIC)

Abuse

From Wikipedia, the free encyclopedia

This article is about the mistreatment of people or systems. For other uses, see Abuse (disambiguation).

"Mistreat" redirects here. For other uses, see Mistreat (disambiguation).

Contents [hide]

1 Types and contexts of abuse
1.1 Abuse of authority
1.2 Abuse of corpse
1.3 Abuse of discretion
1.4 Abuse of dominance
1.5 Abuse of indulgences
1.6 Abuse of information
1.7 Abuse of power
1.8 Abuse of process
1.9 Abuse of rank
1.10 Abuse of statistics
1.11 Abuse of the system
1.12 Abuse of trust
1.13 Academic abuse
1.14 Ad hominem abuse

1.15 Adolescent abuse
1.16 Adult abuse
1.17 Animal abuse
1.18 Anti-social behaviour
1.19 Bullying
1.20 Character assassination
1.21 Child abuse
1.22 Child-on-child sexual abuse
1.23 Child sexual abuse
1.24 Church abuse
1.25 Civil rights abuse
1.26 Clandestine abuse
1.27 Clerical abuse
1.28 Corporate abuse
1.29 Corruption
1.30 Cyber abuse or cyber bullying
1.31 Dating abuse or dating violence
1.32 Defamation
1.33 Detainee abuse
1.34 Disability abuse
1.35 Discriminatory abuse
1.36 Doctor abuse
1.37 Domestic abuse or domestic violence
1.38 Economic abuse
1.39 Elder abuse
1.40 Emotional abuse
1.41 Employee abuse
1.42 False accusations
1.43 Financial abuse
1.44 Flag abuse
1.45 Gaming the system
1.46 Gaslighting
1.47 Gay abuse or gay bashing
1.48 Group psychological abuse
1.49 Harassment
1.50 Hate crimes
1.51 Hazing
1.52 Human rights abuse
1.53 Humiliation
1.54 Incivility
1.55 Institutional abuse
1.56 Insult
1.57 Intimidation
1.58 Legal abuse
1.59 Lesbian abuse
1.60 Malpractice
1.61 Market abuse
1.62 Material abuse
1.63 Medical abuse
1.64 Mental abuse

1.65 Military abuse
1.66 Mind abuse or mind control
1.67 Misconduct
1.68 Mobbing
1.69 Narcissistic abuse
1.70 Neglect
1.71 Negligence
1.72 Nurse abuse or nursing abuse
1.73 Online abuse
1.74 Parental abuse by children
1.75 Parental abuse of children
1.76 Passive–aggressive behavior
1.77 Patient abuse
1.78 Peer abuse
1.79 Persecution
1.80 Personal abuse or personal attacks
1.81 Physical abuse
1.82 Police abuse
1.83 Political abuse
1.84 Prejudice
1.85 Prison abuse or prisoner abuse
1.86 Professional abuse
1.87 Psychological abuse
1.88 Racial abuse
1.89 Ragging
1.90 Rape
1.91 Relational aggression
1.92 Religious abuse
1.93 Resident abuse
1.94 Rudeness
1.95 Satanic ritual abuse
1.96 School bullying
1.97 Sectarian abuse
1.98 Self-abuse
1.99 Sexual abuse
1.100 Sexual bullying
1.101 Sibling abuse
1.102 Smear campaign
1.103 Societal abuse
1.104 Spiritual abuse
1.105 Spousal abuse
1.106 Stalking
1.107 Structural abuse
1.108 Surveillance abuse
1.109 Taunting
1.110 Teacher abuse
1.111 Teasing
1.112 Telephone abuse
1.113 Terrorism
1.114 Torture

1.115 Transgender abuse or trans bashing
1.116 Umpire abuse
1.117 Verbal abuse or verbal attacks
1.118 Whispering campaign
1.119 Workplace abuse or workplace bullying
2 Characteristics and styles of abuse
2.1 Telltale signs of abuse
3 Psychological characteristics of abusers
4 Effects of abuse on victims
5 Victim blaming
6 Cycles of abuse
7 Intergenerational transmission of abuse
8 Abuse cases
9 See also
10 References
11 Further reading
12 External links

For abuse within the Wikipedia community, see Wikipedia:Abuse.

Abuse is the improper usage or treatment for a bad purpose, often to unfairly or improperly gain benefit. Abuse can come in many forms, such as: physical or verbal maltreatment, injury, sexual assault, violation, rape, unjust practices; wrongful practice or custom; offense; crime, or otherwise verbal aggression.[1]

[edit]Types and contexts of abuse

[edit]Abuse of authority

Main articles: Oppression and Political corruption

See also: Abuses of CIA authority, 1970s–1990s

Abuse of authority, in the form of political corruption, is the use of legislated or otherwise authorized powers by government officials for illegitimate private gain. Misuse of government power for other purposes, such as repression of political opponents and general police brutality, is not considered political corruption. Neither are illegal acts by private persons or corporations not directly involved with the government. An illegal act by an officeholder constitutes political corruption only if the act is directly related to their official duties.

Abuse of authority is separated from abuse of power in that the act is originally condoned, but is extended beyond that initially conceived and is in not all cases

[edit]Abuse of corpse

See: Abuse of corpse

[edit]Abuse of discretion

Main article: Abuse of discretion

An abuse of discretion is a failure to take into proper consideration the facts and law relating to a particular matter; an arbitrary or unreasonable departure from precedent and settled judicial custom.[2]

[edit]Abuse of dominance

See: Abuse of dominance

[edit]Abuse of indulgences

See: Abuse of indulgences

[edit]Abuse of information

Main articles: Breach of confidence, Copyright infringement, Insider trading, and Plagiarism

Abuse of information typically involves a breach of confidence or plagiarism, or extending the confidence of information beyond those authorized.

In the financial world, Insider trading can also be considered a misuse of internal information that gives an unfair advantage in investment.

[edit]Abuse of power

Main articles: Malfeasance in office, Misfeasance in public office, and Oppression

Abuse of power, in the form of "malfeasance in office" or "official misconduct," is the commission of an unlawful act, done in an official capacity, which affects the performance of official duties. Malfeasance in office is often grounds for a for cause removal of an elected official by statute or recall election.

Further reading

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[edit]Abuse of process

Main article: Abuse of process

A cause of action in tort arising from one party making a malicious and deliberate misuse or perversion of regularly issued court process (civil or criminal) not justified by the underlying legal action.

[edit]Abuse of rank

Main article: Rankism

Rankism (also called abuse of rank) is treating people of a lower rank in an abusive, discriminatory, or exploitative way.[3] Robert W. Fuller claims that rankism includes the abuse of the power inherent in superior rank, with the view that rank-based abuse underlies many other phenomena such as bullying, racism, sexism, and homophobia.

[edit]Abuse of statistics

See: Abuse of statistics

[edit]Abuse of the system

See: Abuse#Gaming the system

[edit]Abuse of trust

See: Position of trust

[edit]Academic abuse

See: Academic abuse

[edit]Ad hominem abuse

Main article: Ad hominem abuse

Ad hominem abuse (also called personal abuse or personal attacks) usually involves insulting or belittling one's opponent in order to invalidate his or her argument, but can also involve pointing out factual but ostensible character flaws or actions which are irrelevant to the opponent's argument.

[edit]Adolescent abuse

See: Anti-social behaviour, Juvenile delinquency, Parental abuse by adolescents, Parental abuse of adolescents

[edit]Adult abuse

Adult abuse refers to the abuse of vulnerable adults.[4]

[edit]Animal abuse

Main article: Cruelty to animals

See also: :Category:Animal cruelty

Animal abuse is the infliction of suffering or harm upon animals, other than humans, for purposes other than self-defense. More narrowly, it can be harm for specific gain, such as killing animals for fur. Diverging viewpoints are held by jurisdictions throughout the world.

[edit]Anti-social behaviour

Main article: Anti-social behaviour

See also: Incivility

Anti-social behaviour is often seen as public behaviour that lacks judgement and consideration for others and may cause them or their property damage. It may be intentional, as with vandalism or graffiti, or the result of negligence. Persistent anti-social behaviour may be a manifestation of an antisocial personality disorder. The counterpart of anti-social behaviour is pro-social behaviour, namely any behaviour intended to help or benefit another person, group or society.[5]

[edit]Bullying

Main article: Bullying

See also: Template:Bullying, Category:Bullying, Bullying in academia, Bullying in information technology, Bullying in medicine, Bullying in the military, Bullying in nursing, Bullying in teaching, Gay bullying, School bullying, Sexual bullying, and Workplace bullying

Bullying is repeated acts over time that involves a real or perceived imbalance of power with the more powerful individual or group attacking those who are less powerful.[6] Bullying may consist of three basic types of abuse – verbal, physical and emotional. It typically involves subtle methods of coercion such as intimidation. Bullying can be defined in many different ways. Although the UK currently has no legal definition of bullying,[7] some US states have laws against it. Bullying is usually done to coerce others by fear or threat.

[edit]Character assassination

Main article: Character assassination

Character assassination is an attempt to tarnish a person's reputation. It may involve exaggeration or manipulation of facts to present an untrue picture of the targeted person. It is a form of defamation and can be a form of ad hominem argument.

[edit]Child abuse

Main article: Child abuse

See also: Category:Child abuse and Child neglect

Child abuse is the physical or psychological/emotional mistreatment of children. In the United States, the Centers for Disease Control and Prevention (CDC) define child maltreatment as any act or series of acts of commission or omission by a parent or other caregiver that results in harm, potential for harm, or threat of harm to a child.[8] Most child abuse occurs in a child's home, with a smaller amount occurring in the organizations, schools or communities the child interacts with. There are four major categories of child abuse: neglect, physical abuse, psychological/emotional abuse, and sexual abuse.

[edit]Child-on-child sexual abuse

Main article: Child-on-child sexual abuse

Child-on-child sexual abuse refers to a form of child sexual abuse in which a prepubescent child is sexually abused by one or more other children or adolescent youths, and in which no adult is directly involved. This includes sexual activity between children that occurs without consent, without equality, or as a result of coercion;[9] particularly when physical force, threats, trickery, or emotional manipulation are used to elicit cooperation.

[edit]Child sexual abuse

Main article: Child sexual abuse

See also: :Category:Child sexual abuse, Child sexual abuse laws in the United States, False allegation of child sexual abuse, Laws regarding child sexual abuse, and Relationship between child pornography and child sexual abuse

Child sexual abuse is a form of child abuse in which an adult or older adolescent abuses a child for sexual stimulation.[10][11] Forms of CSA include asking or pressuring a child to engage in sexual activities (regardless of the outcome), indecent exposure of the genitals to a child, displaying pornography to a child, actual sexual contact against a child, physical contact with the child's genitals, viewing of the child's genitalia without physical contact, or using a child to produce child pornography.[10][12][13]

[edit]Church abuse

See: Abuse#Spiritual abuse

[edit]Civil rights abuse

Main article: Civil rights

[edit]Clandestine abuse

Main article: Clandestine abuse

Clandestine abuse is sexual, psychological, or physical abuse "that is kept secret for a purpose, concealed, or underhanded."[14]

[edit]Clerical abuse

See: Catholic sex abuse cases

[edit]Corporate abuse

Main articles: Accounting scandals, Corporate behaviour, Corporate crime, Control fraud, and List of corporate scandals

[edit]Corruption

Main article: Corruption

See also: Category:Corruption, Corruption in local government, Police corruption, and Political corruption

Corruption can be defined as the misuse of public office for private gain. This involves putting personal interests above those of the people and ideals he or she is pledged to serve. It comes in many forms, is often subjective and can range in severity. Corruption can involve promises, threats or both.

[edit]Cyber abuse or cyber bullying

Main article: Cyber-bullying

See also: Computer crime, Cyber-aggression in the workplace, Cyberstalking, Cyberterrorism, Email bomb, Flaming (Internet), Harassment by computer, Cyber-bullying, and Troll (Internet)

Cyberbullying "involves the use of information and communication technologies to support deliberate, repeated, and hostile behavior by an individual or group, that is intended to harm others. -Bill Belsey"[15]

[edit]Dating abuse or dating violence

Main article: Dating abuse

See also: Date rape

Dating abuse is a pattern of abusive behavior exhibited by one or both partners in a dating relationship. The behavior may include, but is not limited to, physical abuse, psychological abuse and sexual abuse.

[edit]Defamation

Main article: Defamation

See also: Libel and Slander

Defamation is the communication of a statement that makes a claim, expressly stated or implied to be factual, that may give an individual, business, product, group, government or nation a negative image. It is usually, but not always,[16] a requirement that this claim be false and that the publication is communicated to someone other than the person defamed (the claimant).

[edit]Detainee abuse

See: Abuse#Prison abuse or prisoner abuse

Disability abuse

Main article: Disability abuse

It has been noted that disabled people are disproportionately affected by disability abuse and bullying, and such activity has been cited as a hate crime.[17] The bullying is not limited to those who are visibly disabled such as wheelchair-users or physically deformed such as those with a cleft lip but also those with learning disabilities such as autism[18][19] and dyspraxia[20][21] In the latter case, this is linked to a poor ability in physical education, and this behaviour can be encouraged by the unthinking physical education teacher. Abuse of the disabled is not limited to schools. There are many known cases in which the disabled have been abused by staff of a "care institution", such as the case revealed in a BBC Panorama programme on a Castlebeck care home (Winterbourne View) near Bristol which led to its closure and the suspension and sacking of some of the staff.[22]

[edit]Discriminatory abuse

Main articles: Discrimination, :Category:Discrimination, Template:Discrimination, Template:Discrimination sidebar, Prejudice, and Religious discrimination

Discriminatory abuse involves picking on or treating someone unfairly because something about them is different, for example it may be:

- age.
- clothing or appearance.
- ethnicity, nationality or culture including traits like language.
- gender, including gender-related traits (e.g. Pregnancy).
- health (such as AIDS) or disability (e.g. mental disorders).
- language usage.
- lifestyle or occupation.
- race or skin colour.
- religion or political affiliation.
- sexuality and sexual orientation.
- social class or creed.
- weight and height.

Discriminatory laws such as redlining have existed in many countries. In some countries, controversial attempts such as racial quotas have been used to redress negative effects of discrimination.

Other acts of discrimination include political libel, defamation of groups and stereotypes based on exaggerations.

Domestic abuse or domestic violence

Main article: Domestic violence
See also: Category:Domestic violence, Christianity and domestic violence, Common couple violence, Domestic violence and pregnancy, Effects of domestic violence on children,Epidemiology of domestic violence, and Islam and domestic violence

Domestic abuse can be broadly defined as any form of abusive behaviors by one or both partners in an [intimate relationship] such as marriage, cohabitation,family, dating or even friends. It is important to remember that abuse is always intentional and can not happen by accident. Domestic violence has many forms including:

- Physical aggression (hitting, kicking, biting, shoving, restraining, throwing objects), or threats thereof;
- Sexual abuse;
- Emotional abuse;
- Financial abuse (withholding money or controlling all money including that of other family members);
- Social abuse (restricting access to friends and/or family, insulting or threatening friends and/or family), controlling or domineering;
- Intimidation;

- Stalking;
- Passive/covert abuse[23][24] (e.g., neglect);
- economic deprivation.

Domestic violence may or may not constitute a crime, depending on local statues, severity and duration of specific acts, and other variables. Alcohol consumption[25] and mental illness[26] have frequently been associated with abuse.

[edit]Economic abuse

Main article: Economic abuse

Economic abuse is a form of abuse when one intimate partner has control over the other partner's access to economic resources,[27] which diminishes the victim's capacity to support him/herself and forces him/her to depend on the perpetrator financially.[27][28][29]

[edit]Elder abuse

Main article: Elder abuse

Elder abuse is a type of harm to older adults involving abuse by trusted individuals in a manner that "causes harm or distress to an older person."[30] This definition has been adopted by the World Health Organization from a definition put forward by Action on Elder Abuse in the UK.

[edit]Emotional abuse

See: Psychological abuse

[edit]Employee abuse

See: Abuse#Workplace abuse or workplace bullying

[edit]False accusations

Main article: False accusations

False accusations (or false allegations) can be in any of the following contexts:

- informally in everyday life
- quasi-judicially
- judicially.

[edit]Financial abuse

See also: Economic abuse

Financial abuse (or material abuse) is, for example, illegal or unauthorized use of a person’s property, money, pension book or other valuables (including changing the person's will to name the abuser as heir), often fraudulently obtaining power of attorney, followed by deprivation of money or other property, or by eviction from own home.

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[edit]Flag abuse

Main article: Flag desecration

Flag abuse (or flag desecration) is a term applied to various acts that intentionally destroy, damage or mutilate a flag in public, most often a national flag. Often, such action is intended to make a political point against a country or its policies. Some countries have laws forbidding methods of destruction (such as burning in public) or forbidding particular uses (such as for commercial purposes); such laws may distinguish between desecration of the country's own national flag and flags of other countries. Some countries have laws protecting the right to burn a flag as free speech.

[edit]Gaming the system

Main article: Gaming the system

Gaming the system (or bending the rules, gaming the rules, playing the system, abusing the system, milking the system, or working the system) can be defined as using the rules and procedures meant to protect a system in order, instead, to manipulate the system for a desired outcome..[31]

[edit]Gaslighting

Main article: Gaslighting

Gaslighting is a form of psychological abuse in which false information is presented to the victim with the intent of making them doubt their own memory and perception. It may simply be thedenial by an abuser that previous abusive incidents ever occurred, or it could be the staging of bizarre events by the abuser with the intention of disorientating the victim.

[edit]Gay abuse or gay bashing

Main article: Gay bashing

Gay bashing and gay bullying is verbal or physical abuse against a person who is perceived by the aggressor to be gay, lesbian, or bisexual, including people who are actually heterosexual or of non-specific or unknown sexual orientation.

[edit]Group psychological abuse

Main article: Group psychological abuse

Group psychological abuse refers to groups where methods of psychological abuse are frequently or systematically used on their members. Such abuse would be practices that treat the members as objects one is free to manipulate instead of respecting their autonomy, human rights, identity and dignity. In a group can also play mind games with another person that can make the victim seem like they are accepted but in actuality they are backstabbing the person when his/her back is turned. When the victim requests assistance from the abusing group it is not given.

[edit]Harassment

Main article: Harassment
See also: Harassment by computer, Electronic harassment, Harassment in the United Kingdom, Landlord harassment, Hostile environment sexual harassment, Mobile harassment, Power harassment, Sexual harassment, and Sexual harassment in education

Harassment covers a wide range of offensive behaviour. It is commonly understood as behaviour intended to disturb or upset. In the legal sense, it is behaviour which *is* found threatening or disturbing.

Power harassment is harassment or unwelcome attention of a political nature, often occurring in the environment of a workplace.

Sexual harassment refers to persistent and unwanted sexual advances, typically in the workplace, where the consequences of refusing are potentially very disadvantageous to the victim.

[edit]Hate crimes

Main article: Hate crimes
See also: :Category:Hate crime, Disability hate crime, Hate mail, and Hate speech

Hate crimes occur when a perpetrator targets a victim because of his or her perceived membership in a certain social group, usually defined by racial group, religion, sexual orientation, disability,ethnicity, nationality, age, gender, gender identity, or political affiliation.[32]

"Hate crime" generally refers to criminal acts which are seen to have been motivated by hatred of one or more of the listed conditions. Incidents may involve physical assault, damage to property,bullying, harassment, verbal abuse or insults, or offensive graffiti or letters (hate mail).[33]

[edit]Hazing

Main article: Hazing

Hazing is activities involving harassment, abuse, or humiliation used as a way of initiating a person into a group.

Hazing is seen in many different types of groups, including in gangs, clubs, sports teams, military units, and workplaces. In the United States and Canada, hazing is often associated with Greek-letter organizations (fraternities and sororities). Hazing is often prohibited by law and may be either physical (possibly violent) or mental (possibly degrading) practices. It may also include nudity or sexually oriented activities.

[edit]Human rights abuse

Main article: Human rights
See also: :Category:Human rights abuses

Human rights are "basic rights and freedoms to which all humans are entitled."[34] Examples of rights and freedoms which have come to be commonly thought of as human rights include civil and political rights, such as the right to life and liberty, freedom of expression, and equality before the law; and economic, social and cultural rights, including the right to participate in culture, the right to be treated with respect and dignity, the right to food, the right to work, and the right to education in some countries.

[edit]Humiliation

Main article: Humiliation

Humiliation is the abasement of pride, which creates mortification or leads to a state of being humbled or reduced to lowliness or submission. It can be brought about through bullying, intimidation, physical or mental mistreatment or trickery, or by embarrassment if a person is revealed to have committed a socially or legally unacceptable act.

[edit]Incivility

Main article: Incivility
See also: Workplace incivility

Incivility is a general term for social behaviour lacking in civility or good manners, on a scale from rudeness or lack of respect for elders, to vandalism and hooliganism, through public drunkennessand threatening behaviour.[35]

[edit]Institutional abuse

Main article: Institutional abuse
See also: Foster care#State abuses

Institutional abuse can typically occur in a care home, nursing home, acute hospital or in-patient setting and can be any of the following:[36]

- discriminatory abuse
- financial abuse
- neglect
- physical abuse
- psychological and emotional abuse
- sexual abuse
- verbal abuse

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[edit]Insult

Main article: Insult
See also: Ad hominem, Incivility, and Rudeness

An insult is an expression, statement (or sometimes behavior) which is considered degrading and offensive.

[edit]Intimidation

Main article: Intimidation
See also: Witness intimidation

Intimidation is intentional behavior "which would cause a person of ordinary sensibilities" fear of injury or harm. It's not necessary to prove that the behavior was so violent as to cause terror or that the victim was actually frightened.[37] "The calculated use of violence or the threat of violence to attain goals political, religious, or ideological in nature...through intimidation, coercion, or instillingfear" can be defined as terrorism.[38]

[edit]Legal abuse

Main article: Legal abuse
See also: :Category:Abuse of the legal system

Legal abuse refers to abuses associated with both civil and criminal legal action. Abuse can originate from nearly any part of the legal system, including frivolous and vexatious litigants, abuses by law enforcement, incompetent, careless or corrupt attorneys and misconduct from the judiciary itself.[39][40]

Legal abuse is responsible not only for injustice, but also harm to physical, psychological and societal health.*[41]

[edit]Lesbian abuse

See: Abuse#Gay abuse or gay bashing

[edit]Malpractice

See: Abuse#Negligence

[edit]Market abuse

Main article: Market abuse
See also: Anti-competitive practices and Insider trading

Market abuse may arise in circumstances where financial investors have been unreasonably disadvantaged, directly or indirectly, by others who:[42]

- have used information which is not publicly available (insider dealing)
- have distorted the price-setting mechanism of financial instruments
- have disseminated false or misleading information.

[edit]Material abuse

See: Abuse#Financial_abuse

[edit]Medical abuse

See: Abuse#Patient abuse, Aggression in healthcare, Bullying in medicine, Bullying in nursing, Medical malpractice and Never events

[edit]Mental abuse

See: Abuse#Psychological abuse

[edit]Military abuse

Main articles: Bullying in the military, Military use of children, Military sexual trauma, War crime, and War rape

War crimes are "violations of the laws or customs of war"; including "murder, the ill-treatment or deportation of civilian residents of an occupied territory to slave labor camps", "the murder or ill-treatment of prisoners of war", the killing of hostages, "the wanton destruction of cities, towns and villages, and any devastation not justified by military, or civilian necessity".[43]

War rape is rape committed by soldiers, other combatants or civilians during armed conflict or war. During war and armed conflict rape is frequently used as means of psychological warfare in order to humiliate the enemy and undermine their morale.

Military sexual trauma is sexual assault and rape experienced by military personnel. It is often accompanied by posttraumatic stress disorder.[44]

[edit]Mind abuse or mind control

Main article: Mind control
See also: :Category:Mind control and Mind games

Mind abuse or mind control refers to a process in which a group or individual "systematically uses unethically manipulative methods to persuade others to conform to the wishes of the manipulator(s), often to the detriment of the person being manipulated".[45] The term has been applied to any tactic, psychological or otherwise, which can be seen as subverting an individual's sense of control over their own thinking, behavior, emotions or decision making.

[edit]Misconduct

Main article: Misconduct
See also: Duty to report misconduct, Judicial misconduct, Official misconduct, Police misconduct, Police misconduct in the United States, Prosecutorial misconduct, Scientific misconduct, and Sexual misconduct

Misconduct means a wrongful, improper, or unlawful conduct motivated by premeditated or intentional purpose or by obstinate indifference to the consequences of one's acts. Three categories of misconduct are **official misconduct**, **professional misconduct** and **sexual misconduct**.

[edit]Mobbing

Main article: Mobbing

Mobbing means bullying of an individual by a group in any context. Identified as emotional abuse in the workplace, such as "ganging up" by co-workers, subordinates or superiors, to force someone out of the workplace through rumor, innuendo, intimidation, humiliation, discrediting, and isolation, it is also referred to as malicious, nonsexual, nonracial, general harassment.[46]

Mobbing can take place in any group environment such as a workplace, neighbourhood or family.

[edit]Narcissistic abuse

Main article: Narcissistic abuse

Narcissistic abuse is a term that emerged in the late 20th century, and became more prominent in the noughties. It originally referred specifically to abuse by narcissistic parents of their children, but more recently has come to mean any abuse by a narcissist.

[edit]Neglect

Main article: Neglect
See also: Child neglect and Self-neglect

Neglect is a passive form of abuse in which the perpetrator is responsible to provide care for a victim who is unable to care for oneself, but fails to provide adequate care to meet the victim's needs, thereby resulting in the victim's demise.

Neglect may include failing to provide sufficient supervision, nourishment, medical care or other needs for which the victim is helpless to provide for him/her/itself. The victim may be a child, physically or mentally disabled adult, animal, plant, or inanimate object.

[edit]Negligence

Main article: Negligence

See also: Legal malpractice, Malpractice, Medical malpractice, Negligence in employment, and Professional negligence in English Law

Negligence is conduct that is culpable because it falls short of what a reasonable person would do to protect another individual from foreseeable risks of harm.

[edit]Nurse abuse or nursing abuse

See: Bullying in nursing, Patient abuse

[edit]Online abuse

See: Abuse#Cyber abuse or cyber bullying

[edit]Parental abuse by children

Main article: Parental abuse by children

Abuse of parents by their children is a common but under reported and under researched subject. Parents are quite often subject to levels of childhood aggression, typically in the form of verbal orphysical abuse, in excess of normal childhood aggressive outbursts. Parents feel a sense of shame and humiliation to have that problem, so they rarely seek help and there is usually little or no help available anyway.[47][48]

[edit]Parental abuse of children

See: Abuse#Child abuse

[edit]Passive–aggressive behavior

Main article: Passive–aggressive behavior
See also: Mind games, Neglect, Obstructionism, Procrastination, Silent treatment, and Social undermining

Passive–aggressive behavior is a form of covert abuse. It is passive, sometimes obstructionist resistance to following through with expectations in interpersonal or occupational situations. It can manifest itself as learned helplessness, procrastination, stubbornness, resentment, sullenness, or deliberate/repeated failure to accomplish requested tasks for which one is (often explicitly) responsible.

[edit]Patient abuse

Main article: Patient abuse
See also: :Category:Health care professionals convicted of murdering patients, Experimentation on prisoners, Iatrogenesis, Medical harm, Medical malpractice, and Foster care#State abuses in the United States

Patient abuse or neglect is any action or failure to act which causes unreasonable suffering, misery or harm to the patient. It includes physically striking or sexually assaulting a patient. It also includes withholding of necessary food, physical care, and medical attention. It applies to various contexts such as hospitals, nursing homes, clinics and home visits.[49]

[edit]Peer abuse

"Peer abuse" is an expression popularized by Elizabeth Bennett in 2006 to reinforce the idea that it is as valid to identify bullying as a form of abuse as any other type of abuse.[50] The term conveys similar connotations to the term peer victimization.

[edit]Persecution

Main article: Persecution
See also: :Category:Persecution and :Category:Religious persecution

Persecution is the systematic mistreatment of an individual or group by another group. The most common forms are religious persecution, ethnic persecution, and political persecution, though there is naturally some overlap between these terms.

[edit]Personal abuse or personal attacks

See: Abuse#Ad hominem abuse

[edit]Physical abuse

Main article: Physical abuse

Physical abuse is abuse involving contact intended to cause feelings of intimidation, pain, injury, or other physical suffering or bodily harm.

[edit]Police abuse

Main articles: Police brutality, Police corruption, and Police misconduct

Police brutality is the intentional use of excessive force, usually physical, but potentially also in the form of verbal attacks and psychological intimidation, by a police officer. It is in some instances triggered by "contempt of cop", i.e., perceived disrespect towards police officers.

Police corruption is a specific form of police misconduct designed to obtain financial benefits and/or career advancement for a police officer or officers in exchange for not pursuing, or selectively pursuing, an investigation or arrest.

Police misconduct refers to inappropriate actions taken by police officers in connection with their official duties. Police misconduct can lead to a miscarriage of justice and sometimes involves discrimination.

Political abuse

Main articles: Political corruption, :Category:Political corruption, Political repression, :Category:Political repression, and Political abuse of psychiatry

This section requires expansion. *(January 2010)*

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[edit]Prejudice

Main article: Prejudice

A prejudice is a preconceived belief, opinion, or judgment toward a group of people or a single person because of race, social class, gender, ethnicity, sexual orientation, age, disability, political beliefs, religion, line of work or other personal characteristics. It also means a priori beliefs (without knowledge of the facts) and includes "any unreasonable attitude that is unusually resistant to rational influence."[51] Although positive and negative prejudice both exist, when used negatively, "prejudice" implies fear and antipathy toward such a group or person.

[edit]Prison abuse or prisoner abuse

Main article: Prisoner abuse
See also: :Category:Military prisoner abuse scandals, Experimentation on prisoners, and Prison rape

Prisoner abuse is the mistreatment of persons while they are under arrest or incarcerated. Abuse falling into this category includes:

- **Physical abuse:** hitting, beating, or other unauthorised corporal punishment.
- **Psychological abuse:** taunting, sleep deprivation, or other forms of psychological abuse, occasionally white noise
- **Sexual abuse:** forced intercourse, genital mutilation, or other forms of sexual abuse.
- **Other abuse:** refusal of essential medication, humiliation, etc.
- **Enhanced interrogation:** methods implemented in the War on Terror purportedly needed to extract information since other techniques would not yield results.
- **Torture:** any act by which severe pain, whether physical or psychological, is intentionally inflicted

[edit]Professional abuse

Main article: Professional abuse
See also: Malpractice, Professional ethics, Professional negligence in English Law, and Professional responsibility

Professional abusers:[52]

- take advantage of their client or patient's trust
- exploit their vulnerability
- do not act in their best interests
- fail to keep professional boundaries

Abuse may be:

- discriminatory
- financial
- physical/neglectful
- psychological/emotional
- sexual

Professional abuse always involves:

- betrayal of trust
- exploitation of vulnerability
- violation of professional boundaries

Further reading

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[edit]Psychological abuse

Main article: Psychological abuse
See also: :Category:Psychological abuse

Psychological abuse, also referred to as emotional abuse or mental abuse, is a form of abuse characterized by a person subjecting or exposing another to behavior that is psychologically harmful. Such abuse is often associated with situations of power imbalance, such as abusive relationships, bullying, child abuse and in the workplace.

[edit]Racial abuse

Main article: Racism

Racism is abusive attitudes or treatment of others based on the belief that race is a primary determinant of human traits and capacities. It is a form of pride that one's own race is superior and, as a result, has a right to "rule or dominate others," according to a *Macquarie Dictionary* definition. Racism is correlated with and can foster race-based prejudice, violence, dislike, discrimination, andoppression.

Racism along with extreme nationalism and ethnic bias was a common trait of fascist regimes such as Nazi Germany in the 1930s and early 1940s, led by Adolf Hitler who orchestrated theHolocaust against 6 million Jews. The Nazi party promoted racism and antisemitism to blamed German Jews and Jews for Germany's economic, social and political woes, including Germany's surrender to the allies by the Treaty of Versailles ended World War I (1918). Hitler thought Jewish intellectuals, communists and capitalists alike, were responsible and he started World War II in 1939 but he fell into defeat in 1945 by the Soviets (Russia) and the same countries (Britain, France and the USA) whom defeated Germany before.

[edit]Ragging

Main article: Ragging
See also: Anti-raggers in Sri Lankan universities, Ragging in India, and Ragging in Sri Lanka

Ragging is a form of abuse on newcomers to educational institutions in India, Sri Lanka, and Australia. It is similar to the American phenomenon known as hazing. Currently, Sri Lanka is said to be its worst affected country in the world.[53][54]

[edit]Rape

Main article: Rape
See also: :Category:Rape, Corrective rape, Date rape, Effects and aftermath of rape, Motivation for rape, Prison rape, Rape by gender, Rape statistics, Rape trauma syndrome, Spousal rape,Types of rape, and War rape

Rape, also referred to as sexual assault, is an assault by a person involving sexual intercourse with or without sexual penetration of another person without that person's consent.

The rate of reporting, prosecution and convictions for rape varies considerably in different jurisdictions. The U.S. Bureau of Justice Statistics (1999) estimated that 91% of U.S. rape victims are female and 9% are male, with 99% of the offenders being male.[55] In one survey of women, only two percent of respondents who stated they were sexually assaulted said that the assault was perpetrated by a stranger.[56] For men, male-male rape in prisons has been a significant problem.[57]

Relational aggression

Main article: Relational aggression

Relational aggression, also known as covert aggression[58] or covert bullying[59] is a type of aggression in which harm is caused through damage to relationships or social status within a group rather than physical violence.[59][60] Relational aggression is more common and more studied among girls than boys.[60]

[edit]Religious abuse

Main article: Religious abuse
See also: Religious discrimination, Religious persecution, :Category:Religious persecution, and Religious terrorism

Religious abuse refers to

- use of religious teachings in an abusive manner that causes psychological harm .
- harassment or humiliation on the basis of the victim's religion, see religious discrimination
- misuse of a religion for selfish, secular or ideological ends, see
  - religion and politics
  - abuse of a clerical position to perpetrate non-religiously motivated abuse, such as in the Catholic sex abuse cases.[61]
- any form of religious violence, including
  - human sacrifice
  - violent initiation rites

[edit]Resident abuse

See: Resident abuse

[edit]Rudeness

Main article: Rudeness

Rudeness (also called impudence or effrontery) is the disrespect and failure to behave within the context of a society or a group of people's social laws or etiquette.

[edit]Satanic ritual abuse

Main article: Satanic ritual abuse

Satanic ritual abuse (SRA, sometimes known as ritual abuse, ritualistic abuse, organised abuse, sadistic ritual abuse and other variants) was a moral panic that originated in the United States in the 1980s, spreading throughout the country and eventually to many parts of the world, before subsiding in the late 1990s.

[edit]School bullying

Main article: School bullying
See also: Bullying in teaching and List of school pranks

School bullying, is a type of bullying that occurs in connection with education, either inside or outside of school. Bullying can be physical, verbal, or emotional and is usually repeated over a period of time.[62][63]

[edit]Sectarian abuse

Main article: Sectarianism

[edit]Self-abuse

Main articles: Self-abasement, Self-blame, Self-destructive behaviour, Self-harm, Self-hatred, Self-neglect, and Self-victimization

Self-destructive behaviour is a broad set of extreme actions and emotions including self-harm and drug abuse. It can take a variety of forms, and be undertaken for a variety of reasons. It is most visible in young adults and adolescents, but it may affect people of any age.

[edit]Sexual abuse

Main article: Sexual abuse
See also: Template:Sexual abuse, :Category:Sexual abuse, Sexual harassment, Sexual misconduct, and Sexual slavery

Sexual abuse is the forcing of undesired sexual behavior by one person upon another, when that force falls short of being a sexual assault. The offender is referred to as a sexual abuser or (often pejoratively) molester.[64] The term also covers *any* behavior by *any* adult towards a child to stimulate either the adult or child sexually. When the victim is younger than the age of consent, it is referred to as child sexual abuse.

[edit]Sexual bullying

Main article: Sexual bullying
See also: Sexual harassment and Sexual misconduct

Sexual bullying is "any bullying behaviour, whether physical or non-physical, that is based on a person’s sexuality or gender. It is when sexuality or gender is used as a weapon by boys or girls towards other boys or girls – although it is more commonly directed at girls. It can be carried out to a person’s face, behind their back or through the use of technology."[65]

[edit]Sibling abuse

Main article: Sibling abuse

Sibling abuse is the physical, emotional, and/or sexual abuse of one sibling by another.

It is estimated[66] that as many as 3% of children are dangerously abusive towards a sibling, making sibling abuse more common than child abuse by parents, and more common than spousal abuse.

[edit]Smear campaign

Main article: Smear campaign

A "smear campaign", "smear tactic" or simply "smear" is a metaphor for activity that can harm an individual or group's reputation by conflation with a stigmatized group. Sometimes **smear** is used more generally to include any reputation-damaging activity, including such colloquialisms as **mud slinging**.

[edit]Societal abuse

See: Abuse#Structural abuse

[edit]Spiritual abuse

Main article: Spiritual abuse

Spiritual abuse occurs when a person in religious authority or a person with a unique spiritual practice misleads and maltreats another person in the name of God or church or in the mystery of any spiritual concept. Spiritual abuse often refers to an abuser using spiritual or religious rank in taking advantage of the victim's spirituality (mentality and passion on spiritual matters) by putting the victim in a state of unquestioning obedience to an abusive authority.

[edit]Spousal abuse

See: Abuse#Domestic abuse or domestic violence

[edit]Stalking

Main article: Stalking
See also: Cyberstalking and Stalker (stalking)

Stalking is unwanted attention by individuals (and sometimes groups of people) towards others. Stalking behaviors are related to harassment and intimidation. The word "stalking" is used, with some differing meanings, in psychology and psychiatry and also in some legal jurisdictions as a term for a criminal offence. It may also to refer to criminal offences or civil wrongs that include conduct which some people consider to be stalking, such as those described in law as "harassment" or similar terms.

[edit]Structural abuse

Main article: Structural abuse

Structural abuse is sexual, emotional or physical abuse that is imposed on an individual or group by a social or cultural system or authority. Structural abuse is indirect, and exploits the victim on an emotional, mental and psychological level. It could manifest itself through any situation within a cultural or social framework.

[edit]Surveillance abuse

Main article: Surveillance abuse

Surveillance abuse is the use of surveillance methods or technology to monitor the activity of an individual or group of individuals in a way which violates the social norms or laws of a society.Mass surveillance by the state may constitute surveillance abuse if not appropriately regulated. Surveillance abuse often falls outside the scope of lawful interception. It is illegal because it violates peoples' right to privacy.

[edit]Taunting

Main article: Taunting

A taunt is a battle cry, a method in hand-to-hand combat, sarcastic remark, or insult intended to demoralize the recipient, or to anger them and encourage reactionary behaviors without thinking.[citation needed] Taunting can exist as a form of social competition to gain control of the target's cultural capital (i.e. status).[citation needed] In sociological theory, the control of the three social capitals is used to produce an advantage in the social hierarchy as to enforce one's own position in relation to others. Taunting is committed by either directly bullying, or indirectly encouraging others to bully the target. It is also possible to give a response of the same kind, to ensure one's own status. It can be compared to fighting words and trash-talk.

[edit]Teacher abuse

See: Teacher abuse

[edit]Teasing

Main article: Teasing

Teasing is a word with many meanings. In human interactions, teasing comes in two major forms, *playful* and *hurtful*. In mild cases, and especially when it is reciprocal, teasing can be viewed as playful and friendly. However, teasing is often unwelcome and then it takes the form of harassment. In extreme cases, teasing may escalate to actual violence, and may even result in abuse, potentially meeting the legal definition of child abuse or even murder. Children are commonly teased on such matters as their appearance, weight, behavior, abilities, and clothing.[67] This kind of teasing is often hurtful, even when the teaser believes he or she is being playful. One may also tease an animal. Some animals, such as dogs and cats, may recognize this as play, but as in humans, teasing can become hurtful and take the form of bullying and abuse.

[edit]Telephone abuse

See: Nuisance call

[edit]Terrorism

Main article: Terrorism

See also: :Category:Terrorism, :Category:Terrorism by form, Cyberterrorism, Economic terrorism, Religious terrorism, :Category:Religious terrorism, and State terrorism

Terrorism is the systematic use of terror especially as a means of coercion.[68] At present, there is no internationally agreed definition of terrorism.[69][70] Common definitions of terrorism refer only to those violent acts which are intended to create fear (terror), are perpetrated for an ideological goal (as opposed to a lone attack), and deliberately target or disregard the safety of non-combatants (civilians). it is sometimes sponsored by state policies...when a country is not able to militarily prove itself to another enemy country.

[edit]Torture

Main article: Torture
See also: Category:Psychological torture techniques

Torture is any act by which severe pain, whether physical or psychological, is intentionally inflicted.

[edit]Transgender abuse or trans bashing

Main article: Trans bashing

Trans bashing is the act of victimizing a person physically, sexually, or verbally because they are transgender or transsexual.[71] Unlike gay bashing, it is committed because of the target's actual or perceived gender identity, not sexual orientation.

[edit]Umpire abuse

Main article: Umpire abuse

Umpire abuse refers to the act of abuse towards a umpire, referee, or other official in sport. The abuse can be verbal abuse (such as namecalling), or physical abuse (such as punching).

[edit]Verbal abuse or verbal attacks

Main article: Verbal abuse

Verbal abuse is a form of abusive behavior involving the use of language. It is a form of profanity that can occur with or without the use of expletives. Whilst oral communication is the most common form of verbal abuse, it includes abusive words in written form.

Verbal abuse is a pattern of behavior that can seriously interfere with one's positive emotional development and can lead to significant detriment to one's self-esteem, emotional well-being, and physical state. It has been further described as an ongoing emotional environment organized by the abuser for the purposes of control.

[edit]Whispering campaign

Main article: Whispering campaign

A whispering campaign is a method of persuasion in which damaging rumors or innuendo are spread about the target, while the source of the rumors seeks to avoid being detected while spreading them (for example, a political campaign might distribute anonymous flyers attacking the other candidate).

[edit]Workplace abuse or workplace bullying

Main article: Workplace bullying
See also: Template:Workplace, Bullying in academia, Bullying in information technology, Bullying in medicine, Bullying in nursing, Bullying in teaching, Cyber-aggression in the workplace,Control freak, Emotional tyranny, Micromanagement, Negligence in employment, Workplace aggression, Workplace conflict, Workplace incivility, and Workplace stress

Workplace bullying, like childhood bullying is the tendency of individuals or groups to use persistent aggressive or unreasonable behavior against a co-worker. Workplace bullying can include such tactics as verbal, nonverbal, psychological, physical abuse and humiliation. This type of aggression is particularly difficult because unlike the typical forms of school bullying, workplace bullies often operate within the established rules and policies of their organization and their society. Bullying in the workplace is in the majority of cases reported as having been perpetrated by a manager and takes a wide variety of forms.

[edit]Characteristics and styles of abuse

Some important characteristics and styles of abuse are:[72]

- overt abuse
- covert (or controlling) abuse
- unpredictability
- disproportional (exaggerated) reactions
- dehumanization and objectification
- abuse of information
- impossible situations (setting up to fail)
- control by proxy
- ambient abuse (gaslighting)

This section requires expansion. *(January 2010)*

[edit]Telltale signs of abuse

Telltale signs may include:[73]

1. isolation
2. irrational jealousy
3. subtle presence of physical violence
4. discounting, minimizing, and trivializing
5. criticizing
6. withholding
7. blaming.

This section requires expansion. *(January 2010)*

Psychological characteristics of abusers

In their review of data from the Dunedin Multidisciplinary Health and Development Study (a longitudinal birth cohort study; n = 941) Moffitt et al.[74] report that while men exhibit more aggression overall, gender is not a reliable predictor of interpersonal aggression, including psychological aggression. The study found that whether male or female, aggressive people share a cluster of traits, including high rates of suspicion and jealousy; sudden and drastic mood swings; poor self-control; and higher than average rates of approval of violence and aggression (in American society, females are, on average, approved[*clarification needed*] of violence against males). Moffitt et al. also argue that antisocial men exhibit two distinct types of interpersonal aggression (one against strangers, the other against intimate female partners), while antisocial women are rarely aggressive against anyone other than intimate male partners.

Male and female perpetrators of emotional and physical abuse exhibit high rates of personality disorders.[75][76][77] Rates of personality disorder in the general population are roughly 15%–20%, while roughly 80% of abusive men in court-ordered treatment programmes have personality disorders.[78] There are no similar statistics on female perpetrators of family violence due to bias[*citation needed*] in the data gathering procedure. The only statistics available are the reports on child maltreatment,[79] which show that mothers use physical discipline on children more often than fathers, while severe injury and sexual abuse are more often perpetrated by men.[80]

Abusers may aim to avoid household chores or exercise total control of family finances. Abusers can be very manipulative, often recruiting friends, law officers and court officials, even the victim's family to their side, while shifting blame to the victim.[81][82]

[edit]Effects of abuse on victims

Main articles: Complex post-traumatic stress disorder and Psychological trauma

English et al.[83] report that children whose families are characterized by interpersonal violence, including psychological aggression and verbal aggression, may exhibit a range of serious disorders, including chronic depression, anxiety, posttraumatic stress disorder, dissociation and anger. Additionally, English et al. report that the impact of emotional abuse "did not differ significantly" from that of physical abuse. Johnson et al.[84] report that, in a survey of female patients (n = 825), 24% suffered emotional abuse, and this group experienced higher rates of gynecological problems. In their study of men emotionally abused by a wife/partner (n = 116), Hines and Malley-Morrison[85] report that victims exhibit high rates of post traumatic stress disorderand alcoholism.

Namie's study[86] of workplace bullying found that 31% of women and 21% of men who reported workplace bullying exhibited three key symptoms of post-traumatic stress disorder (hypervigilance, intrusive imagery, and avoidance behaviors). A 1998 study of male college students (n = 70) by Simonelli & Ingram[87] found that men who were emotionally abused by their female partners exhibited higher rates of chronic depression than the general population.

A study of college students (n = 80) by Goldsmith and Freyd[88] report that many who have experienced emotional abuse do not characterize the mistreatment as abusive. Additionally, Goldsmith and Freyd show that these people also tend to exhibit higher than average rates of alexithymia (difficulty identifying and processing their own emotions).

Jacobson et al.[89] found that women report markedly higher rates of fear during marital conflicts. However, a rejoinder[90] argued that Jacobson's results were invalid due to men and women's drastically differing interpretations of questionnaires. Coker et al.[91] found that the effects of mental abuse were similar whether the victim was male or female. Pimlott-Kubiak and Cortina[92] found that severity and duration of abuse were the only accurate predictors of aftereffects of abuse; sex of perpetrator or victim were not reliable predictors.

Analysis of large survey (n = 25,876) by LaRoche[93] found that women abused by men were slightly more likely to seek psychological help than were men abused by women (63% vs. 62%).

In a 2007 study, Laurent, et al.,[94] report that psychological aggression in young couples (n = 47) is associated with decreased satisfaction for both partners: "psychological aggression may serve as an impediment to couples development because it reflects less mature coercive tactics and an inability to balance self/other needs effectively." A 2008 study by Walsh and Shulman[95] reports that psychological aggression by females is more likely to be associated with relationship dissatisfaction for both partners, while withdrawal by men is more likely to be associated with relationship dissatisfaction for both partners.

[edit]Victim blaming

Main article: Victim blaming

Victim blaming is holding the victims of a crime, an accident, or any type of abusive maltreatment to be entirely or partially responsible for the unfortunate incident that has occurred in their lives.

[edit]Cycles of abuse

Main article: Cycle of abuse

This section requires expansion.*(December 2009)*

[edit]Intergenerational transmission of abuse

This section is empty. You can help by adding to it. *(March 2010)*

[edit]Abuse cases

See:

- Catholic sex abuse cases
- Catholic sexual abuse scandal in the United States or Category:Roman Catholic Church sex abuse scandal in the United States
- Abu Ghraib torture and prisoner abuse
- Category:Military prisoner abuse scandals
- Category:Human rights abuses

[edit]See also

- Abuse defense
- Abuse prevention program
- Aggression
- Anger
- Child grooming
- Destabilisation
- Dissociation
- Exploitation
- Forced labor
- Human trafficking
- Narcissistic rage
- Pejorative
- Rage (emotion)
- Re-victimization
- Slavery
- Social undermining
- Terms of abuse

- Victimisation

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Further reading

- Macpherson, Michael Colin *The psychology of abuse* (1985)

[edit]External links

- Abuse at the Open Directory Project
- The different types of abuse
- Help for Abused and Battered Women

Propaganda techniques

From Wikipedia, the free encyclopedia

See also: doublespeak, cult of personality, spin (politics), demonization, and factoid

Common media for transmitting propaganda messages include news reports, government reports, books, leaflets, movies, radio, television, and posters. In the case of radio and television, propaganda can exist on news, current-affairs or talk-show segments, as **advertising** or public-service **announce "spots"** or as long-running **advertorials**. Propaganda campaigns often follow a strategic transmission pattern to indoctrinate the target group. This may begin with a simple transmission such as a leaflet dropped from a plane or an advertisement. Generally these messages will contain directions on how to obtain more information, via a web site, hot line, radio program, etc. (as it is seen also for selling purposes among other goals). The strategy intends to initiate the individual from information recipient to information seeker through reinforcement, and then from information seeker to opinion leader through indoctrination.

A number of techniques based in social psychological research are used to generate propaganda. Many of these same techniques can be found under logical fallacies, since propagandists use arguments that, while sometimes convincing, are not necessarily valid.

Some time has been spent analyzing the means by which propaganda messages are transmitted. That work is important but it is clear that information dissemination strategies only become propaganda strategies when coupled with *propagandistic messages*. Identifying these messages is a necessary prerequisite to study the methods by which those messages are spread. Below are a number of techniques for generating propaganda:

Ad hominem

A Latin phrase which has come to mean attacking your opponent, as opposed to attacking their arguments.

Ad nauseam

This argument approach uses tireless repetition of an idea. An idea, especially a simple slogan, that is repeated enough times, may begin to be taken as the truth. This approach works best when media sources are limited and controlled by the propagator.

Appeal to authority

Appeals to authority cite prominent figures to support a position, idea, argument, or course of action.

Appeal to fear

Appeals to fear seek to build support by instilling anxieties and panic in the general population, for example, Joseph Goebbels exploited Theodore N. Kaufman's *Germany Must Perish!* to claim that the Allies sought the extermination of the German people.

Appeal to prejudice

Using loaded or emotive terms to attach value or moral goodness to believing the proposition. For example, the phrase: "Any hard-working taxpayer would have to agree that those who do not work, and who do not support the community do not deserve the community's support through social assistance."

Bandwagon

Bandwagon and "inevitable-victory" appeals attempt to persuade the target audience to join in and take the course of action that "everyone else is taking."

- Inevitable victory: invites those not already on the bandwagon to join those already on the road to certain victory. Those already or at least partially on the bandwagon are reassured that staying aboard is their best course of action.
- Join the crowd: This technique reinforces people's natural desire to be on the winning side. This technique is used to convince the audience that a program is an expression of an irresistible mass movement and that it is in their best interest to join.

Black-and-White fallacy

Presenting only two choices, with the product or idea being propagated as the better choice. (e.g., "You are either with us, or you are with the enemy")

Beautiful people

The type of propaganda that deals with famous people or depicts attractive, happy people. This makes other people think that if they buy a product or follow a certain ideology, they too will be happy or successful. (This is more used in advertising for products, instead of political reasons)

Big Lie

The repeated articulation of a complex of events that justify subsequent action. The descriptions of these events have elements of truth, and the "big lie" generalizations merge and eventually supplant the public's accurate perception of the underlying events. After World War I the German Stab in the back explanation of the cause of their defeat became a justification for Nazi re-militarization and revanchist aggression.

Common man

The "'***plain folks***" or "common man" approach attempts to convince the audience that the propagandist's positions reflect the common sense of the people. It is designed to win the confidence of the audience by communicating in the common manner and style of the target audience. Propagandists use ordinary language and mannerisms (and clothe their message in face-to-face and audiovisual communications) in attempting to identify their point of view with that of the average person. For example, a propaganda leaflet may make an argument on a macroeconomic issue, such as unemployment insurance benefits, using everyday terms: "given that the country has little money during this recession, we should stop paying unemployment benefits to those who do not work, because that is like maxing out all your credit cards during a tight period, when you should be tightening your belt." A common example of this type of propaganda is a political figure, usually running for a placement, in a backyard or shop doing daily routine things. This image appeals to the common person.

Demonizing the enemy

Making individuals from the opposing nation, from a different ethnic group, or those who support the opposing viewpoint appear to be subhuman (e.g., the Vietnam War-era term "gooks" forNational Front for the Liberation of South Vietnam aka Vietcong, (or 'VC') soldiers), worthless, or immoral, through suggestion or false accusations.

Direct order

This technique hopes to simplify the decision making process by using images and words to tell the audience exactly what actions to take, eliminating any other possible choices. Authority figures can be used to give the order, overlapping it with the Appeal to authority technique, but not necessarily. The Uncle Sam "I want you" image is an example of this technique.

Euphoria

The use of an event that generates euphoria or happiness, or using an appealing event to boost morale. Euphoria can be created by declaring a holiday, making luxury items available, or mounting a military parade with marching bands and patriotic messages.

Disinformation

The creation or deletion of information from public records, in the purpose of making a false record of an event or the actions of a person or organization, including outright forgery of photographs, motion pictures, broadcasts, and sound recordings as well as printed documents.

Flag-waving

An attempt to justify an action on the grounds that doing so will make one more patriotic, or in some way benefit a group, country, or idea. The feeling of patriotism which this technique attempts to inspire may not necessarily diminish or entirely omit one's capability for rational examination of the matter in question.

The Finnish Maiden - personification of Finnish nationalism

Glittering generalities

Glittering generalities are emotionally appealing words applied to a product or idea, but which present no concrete argument or analysis. A famous example is the campaign slogan "Ford has a better idea!"

Half-truth

A half-truth is a deceptive statement which may come in several forms and includes some element of truth. The statement might be partly true, the statement may be totally true but only part of the whole truth, or it may utilize some deceptive element, such as improper punctuation, or double meaning, especially if the intent is to deceive, evade blame or misrepresent the truth.

Intentional vagueness

Generalities are deliberately vague so that the audience may supply its own interpretations. The intention is to move the audience by use of undefined phrases, without analyzing their validity or attempting to determine their reasonableness or application. The intent is to cause people to draw their own interpretations rather than simply being presented with an explicit idea. In trying to "figure out" the propaganda, the audience forgoes judgment of the ideas presented. Their validity, reasonableness and application may still be considered.

Obtain disapproval or Reductio ad Hitlerum

This technique is used to persuade a target audience to disapprove of an action or idea by suggesting that the idea is popular with groups hated, feared, or held in contempt by the target audience. Thus if a group which supports a certain policy is led to believe that undesirable, subversive, or contemptible people support the same policy, then the members of the group may decide to change their original position. This is a form of bad logic, where a is said to equal X, and b is said to equal X, therefore, a = b.

Oversimplification

Favorable generalities are used to provide simple answers to complex social, political, economic, or military problems.

Quotes out of Context

Selective editing of quotes which can change meanings. Political documentaries designed to discredit an opponent or an opposing political viewpoint often make use of this technique.

Name-calling

Propagandists use the *name-calling technique* to incite fears and arouse prejudices in their hearers in the intent that the bad names will cause hearers to construct a negative opinion about a group or set of beliefs or ideas that the propagandist would wish hearers to denounce. The method is intended to provoke conclusions about a matter apart from impartial examinations of facts. Name-calling is thus a substitute for rational, fact-based arguments against the an idea or belief on its own merits.[1]

Rationalization

Individuals or groups may use favorable generalities to rationalize questionable acts or beliefs. Vague and pleasant phrases are often used to justify such actions or beliefs.

Red herring

Presenting data or issues that, while compelling, are irrelevant to the argument at hand, and then claiming that it validates the argument.[2]

Labeling

A Euphemism is used when the propagandist attempts to increase the perceived quality, credibility, or credence of a particular ideal. A Dysphemism is used when the intent of the propagandist is to discredit, diminish the perceived quality, or hurt the perceived righteousness of the Mark. By creating a 'label' or 'category' or 'faction' of a population, it is much easier to make an example of these larger bodies, because they can uplift or defame the Mark without actually incurring legal-defamation. Example: "Liberal" is a dysphamsim intended to diminish the perceived credibility of a particular Mark. By taking a displeasing argument presented by a Mark, the propagandist can quote that person, and then attack 'liberals' in an attempt to both (1) create a political battle-ax of unaccountable aggression and (2) diminish the quality of the Mark. If the propagandist uses the label on too-many perceivably credible individuals, muddying up the word can be done by broadcasting bad-examples of 'liberals' into the media. Labeling can be thought of as a sub-set of Guilt by association, another Logical Fallacy. [3]

Repetition

This type of propaganda deals with a jingle or word that is repeated over and over again, thus getting it stuck in someones head, so they can buy the product. The "Repetition" method has been described previously.[4]

Slogans

A slogan is a brief, striking phrase that may include labeling and stereotyping. Although slogans may be enlisted to support reasoned ideas, in practice they tend to act only as emotional appeals. Opponents of the US's invasion and occupation of Iraq use the slogan "blood for oil" to suggest that the invasion and its human losses was done to access Iraq's oil riches. On the other hand, "hawks" who argue that the US should continue to fight in Iraq use the slogan "cut and run" to suggest that it would be cowardly or weak to withdraw from Iraq. Similarly, the names of the military campaigns, such as "enduring freedom" or "just cause", may also be regarded to be slogans, devised to influence people.

Stereotyping or Name Calling or Labeling

This technique attempts to arouse prejudices in an audience by labeling the object of the propaganda campaign as something the target audience fears, hates, loathes, or finds undesirable. For instance, reporting on a foreign country or social group may focus on the stereotypical traits that the reader expects, even though they are far from being representative of the whole country or group; such reporting often focuses on the anecdotal.

Testimonial

Testimonials are quotations, in or out of context, especially cited to support or reject a given policy, action, program, or personality. The reputation or the role (expert, respected public figure, etc.) of the individual giving the statement is exploited. The testimonial places the official sanction of a respected person or authority on a propaganda message. This is done in an effort to cause the target audience to identify itself with the authority or to accept the authority's opinions and beliefs as its own. *See also, damaging quotation*

Transfer

Also known as **Association**, this is a technique of projecting positive or negative qualities (praise or blame) of a person, entity, object, or value (an individual, group, organization, nation, patriotism, etc.) to another to make the second more acceptable or to discredit it. It evokes an emotional response, which stimulates the target to identify with recognized authorities. Often highly visual, this technique often utilizes symbols (for example, the Swastika used in Nazi Germany, originally a symbol for health and prosperity) superimposed over other visual images. An example of common use of this technique in America is for the President's image to be overlaid with a swastika by his opponents.

Unstated assumption

This technique is used when the propaganda concept that the propagandist intends to transmit would seem less credible if explicitly stated. The concept is instead repeatedly assumed or implied.

Virtue words

These are words in the value system of the target audience which tend to produce a positive image when attached to a person or issue. Peace, happiness, security, wise leadership, freedom, "The Truth", etc. are virtue words. In countries such as the U.S. religiosity is seen as a virtue, making associations to this quality effectively beneficial. See ""Transfer"".

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2. ^ A Citizens Guide to Understanding Corporate Media Propaganda Techniques
3. ^ A Citizens Guide to Understanding Corporate Media Propaganda Techniques

Media manipulation

From Wikipedia, the free encyclopedia

Media manipulation can be subtle or direct, can be used by any political persuasion, and is used by all social classes.

Media manipulation is a series of related techniques in which partisans create an image or argument that favours their particular interests.[1] Such tactics may include the use of logical fallacies and propaganda techniques, and often involve the suppression of information or points of view by crowding them out, by inducing other people or groups of people to stop listening to certain arguments, or by simply diverting attention elsewhere.[1] InPropaganda: The Formation of Men's Attitudes, Jacques Ellul writes that public opinion can only express itself through channels which are provided by the mass media of communication-without which there could be no propaganda. [2] It is used within public relations, propaganda, marketing, etc. While the objective for each context is quite different, the broad techniques are oftentimes similar. As illustrated below, many of the more modern mass mediamanipulation methods are types of distraction, on the assumption that the public has a limited attention span.

Contents

[hide]

1 Contexts
  - 1.1 Activism
  - 1.2 Advertising
  - 1.3 Hoaxing
  - 1.4 Marketing
  - 1.5 Political campaigning

  - 1.6 Propagandising
  - 1.7 Psychological warfare
  - 1.8 Public relations
- 2 Techniques
  - 2.1 Distraction types
    - 2.1.1 Distraction by nationalism
    - 2.1.2 Straw man fallacy
    - 2.1.3 Distraction by scapegoat
    - 2.1.4 Distraction by phenomenon
    - 2.1.5 Distraction by semantics
    - 2.1.6 Distraction by regression
    - 2.1.7 Distraction by misleading
    - 2.1.8 Distraction by horror
  - 2.2 Other types
    - 2.2.1 Appeal to consensus
    - 2.2.2 Censorship
    - 2.2.3 Demonisation of the opposition
    - 2.2.4 Fear mongering
- 3 Compliance professionals
  - 3.1 Techniques
- 4 See also
- 5 Notes and references
- 6 Further reading
- 7 External links

[edit]Contexts

[edit]Activism

Main article: Activism

Activism tends to be created by smaller movements or individuals. It consists of efforts to enact, impede, or direct social changes. Activism can take a wide range of forms from writing letters to newspapers or politicians, political campaigning, economic activism such as boycotts or preferentially patronizing businesses, rallies, street marches, strikes, sit-ins, and hunger strikes. Some activists try to persuade people to change their behavior directly, rather than to persuade governments to change or not to change laws. The cooperative movement seeks to build new institutions which conform to cooperative principles, and generally does not lobby or protest politically, and clergymen often exhort their parishioners to follow a particular moral code or system.

[edit]Advertising

Main article: Advertising

Commercial advertising tends to be created by companies to encourage consumption of their products or services. Non-commercial advertisers who spend money to advertise items other than a consumer product or service include political parties, interest groups, religious organizations and governmental agencies. This is a form of communication used to encourage or persuade an audience to continue or take some new action. Most commonly, the desired result is to drive consumer behavior with respect to a commercial offering, although political and ideological advertising is also common. Advertising messages are usually paid for by sponsors and viewed via various traditional media; including mass media such as newspaper, magazines, television commercial, radio advertisement, outdoor advertising or direct mail; or new media such as blogs, websites or text messages.

[edit]Hoaxing

Main article: Hoax

Hoaxes are a form of practical joke that typically uses the techniques of media manipulation to encourage people to believe in some outlandish lie or object. It differs from most other media manipulation contexts in that there is rarely any attempt to influence behaviour, though occasionally a hoax may form part of a fraud or a hoax item may be promoted as a comercial attraction.

Some hoaxes are not a context, but a media manipulation technique describing deceptive materials created for some other context. Such as the "Iraq Dossier" is an example of propaganda used to promote the idea of going to war.

[edit]Marketing

Main articles: Marketing and Sales

Marketing is a series of systems used by companies to communicate the value of a product or service to customers. Marketing might sometimes be interpreted as the art of selling products, but selling is only a small fraction of marketing. It is broader and less focused than "advertising," it is an overall strategy to promoting a product or service. From a societal point of view, marketing is the link between a society’s material requirements and its economic patterns of response. Sales is a key part of marketing, in media manipulation terms it is a way of matching producers and consumers.

[edit]Political campaigning

Main article: Political campaign

Political campaigning is an organized effort which seeks to influence the decision making process within a specific group. In democracies, political campaigns often refer to electoral campaigns, wherein representatives are chosen or referendums are decided. In modern politics, the most high profile political campaigns are focused on candidates for head of state or head of government, often a President or Prime Minister. Political campaigns are often organised by wealthy individuals and political parties working in concert.

[edit]Propagandising

Main article: Propaganda

Propagandising is a form of communication that is aimed at influencing the attitude of a community toward some cause or position by presenting only one side of an argument. Propaganda is commonly created by governments, but some forms of mass-communication created by other powerful organisations can be considered propaganda as well. As opposed to impartially providing information, propaganda, in its most basic sense, presents information primarily to influence an audience. Propaganda is usually repeated and dispersed over a wide variety of media in order to create the chosen result in audience attitudes. While the term propaganda has justifiably acquired a strongly negative connotation by association with its most manipulative and jingoisticexamples (e.g. Nazi Propaganda used to justify the Holocaust), propaganda in its original sense was neutral, and could refer to uses that were generally benign or innocuous, such as public health recommendations, signs encouraging citizens to participate in a census or election, or messages encouraging persons to report crimes to the police, among others.

[edit]Psychological warfare

Main article: Psychological warfare

Psychological warfare is sometimes considered synonomous with propaganda. The principal distinction being that propaganda normally occurs within a nation, whereas psychological warfare normally takes place between nations, oftentimes during war or cold war. Various techniques are used to influence a target's values, beliefs, emotions, motives, reasoning, or behavior. Target audiences can be governments, organizations, groups, and individuals.

[edit]Public relations

Main article: Public relations

Public relations (**PR**) is the management of the flow of information between an individual or an organization and the public. Public relations may include an organization or individual gainingexposure to their audiences using topics of public interest and news items that do not require direct payment. PR is generally created by specialised individuals or firms at the behest of already public individuals or organizations, as a way of managing their public profile.

[edit]Techniques

[edit]Distraction types

[edit]Distraction by nationalism

Media manipulation is often used to promote certain behaviours.

Main article: Transfer (propaganda)

This is a variant on the traditional ad hominem and bandwagon fallacies applied to entire countries. The method is to discredit opposing arguments by appealing to nationalistic pride or memory of past accomplishments, or appealing to fear or dislike of a specific country, or of foreigners in general. It can be very powerful as it discredits foreign journalists (the ones that are least easily manipulated by domestic political or corporate interests).[*citation needed*]

- Example: "You want to know what I really think of the Europeans?" asked the senior United States State Department official. "I think they have been wrong on just about every major international issue for the past 20 years.".[3]
- Example: "Your idea sounds similar to what they are proposing in Turkey. Are you saying the Turks have a better country than us?"
- Example: "The only criticisms of this proposed treaty come from the United States. But we all know that Americans are arrogant and uneducated, so their complaints are irrelevant."
- Example: The "Support Our Troops" campaign created by the Republican party during the War on Terror implies that opposing the war effort detracts support away from the individual soldiers fighting the war. Thus patriotic support of the troops becomes a form of support for the war in general.

[edit]Straw man fallacy

Main article: Straw man

The "straw man fallacy" is the lumping of a strong opposition argument together with one or many weak ones to create a simplistic weak argument that can easily be refuted.

- Example: Grouping all opposed to the 2003 invasion of Iraq as "pacifists", so they can be refuted by arguments for war in general.

[edit]Distraction by scapegoat

Main article: Scapegoat

A combination of straw man and ad hominem, in which your weakest opponent (or easiest to discredit) is considered as your only important opponent.

- Example: if many people oppose the new law, but one of them, say Tsutomu Miyazaki, is obviously acting out of self-interest, mention mostly Tsutomu Miyazaki.
- Example: if many countries oppose an action, but one of them, say Andorra, is obviously acting out of self-interest, mention mostly Andorra.

[edit]Distraction by phenomenon

A risky but effective strategy summarized best, perhaps, by David Mamet's 1997 movie *Wag the Dog*, by which the public can be distracted, for long periods of time, from an important issue, by one which occupies more news time. When the strategy works, you have a war or other media event taking attention away from misbehaving or crooked leaders. When the strategy does not work, the leader's misbehavior remains in the press, and the war is derided as an attempted distraction.

- Example: US President Bill Clinton's cruise missile strikes on Afghanistan and Sudan in August 1998 has been suggested as a means to distract attention from the Monica Lewinsky affair.[4][5]

[edit]Distraction by semantics

This involves using euphemistically pleasing terms to obscure the truth. For example saying "reproductive rights", "pro-choice", or "pro-life" instead of referring to the medical term "abortion". The concept of "states' rights" was invoked to defend the continuation of slavery in the United States on the eve of the American Civil War, and again to fight against the civil rights movement in the 1950s and 1960s. The work of Frank Luntz is a notable example when focus groups are convened and the favorable or unfavorable characterizations are used in the selection of special code wording. The more favorable characterization of politicized concepts is thus chosen for future political campaign repetition.

[edit]Distraction by regression

This method uses the previous state of the opponent propaganda to prevent the negotiation of actual issues.

[edit]Distraction by misleading

This method injects false issues into the opponent's propaganda or attempts to create connections with falsities. Repetition of falsehoods from numerous outlets, nearly simultaneously, is one of the most effective means to mislead by distraction.

[edit]Distraction by horror

This method tries to create a connection between an opponent's propaganda and horrific events. (For example when a minority is being arrested by the police and one attempts to create a connection with past unjust actions)

[edit]Other types

[edit]Appeal to consensus

Main article: Argumentum ad populum

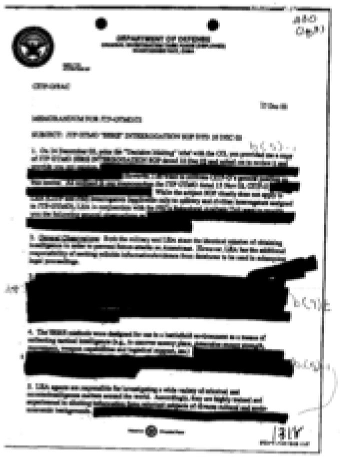
By appealing to a real or fictional "consensus" compliance professionals attempt to create the perception that their opinion is the only opinion, so that alternative ideas are dismissed from public consideration. In other words, the basic idea of the argument is: "*If many believe so, it is so.*" Michael Crichton explains:

Historically, the claim of consensus has been the first refuge of scoundrels; it is a way to avoid debate by claiming that the matter is already settled. Whenever you hear the consensus of scientists agrees on something or other, reach for your wallet, because you're being had.

Let's be clear: the work of science has nothing whatever to do with consensus.

Consensus is the business of politics. Science, on the contrary, requires only one investigator who happens to be right, which means that he or she has results that are verifiable by reference to the real world. In science consensus is irrelevant. What is relevant is reproducible results. The greatest scientists in history are great precisely because they broke with the consensus.[6]

[edit]Censorship



Main article: Censorship

Censorship is a technique whereby public communication is suppressed. It can be done by powerful organizations such as governments or moral campaigns, or by individuals who engage in self-censorship. It occurs for a variety of reasons including national security, to control obscenity, child pornography, and hate speech, to protect children, to promote or restrict political or religious views, to prevent slander and libel, and to protect intellectual property. It can be a way of influencing the public discourse, by determining what can and cannot be said. It may or may not be legal.

[edit]Demonisation of the opposition

Main article: Propaganda#Techniques of propaganda generation

This is a more general case of distraction by nationalism. Opposing views are ascribed to an out-group or hated group, and thus dismissed out of hand. This approach, carried to extremes, becomes a form of suppression, as in McCarthyism, where anyone disapproving of the government was considered "un-American" and "Communist" and was likely to be denounced.

- Example: The consignment of almost all dissent to the "International Jewish conspiracy" by Nazi Germany.
- Example: Labelling those with any sort of right-wing views as "Nazis", or those with left-wing views as "commies", etc.
- Example: Dismissing attendees of tea-party protests opposing government spending as racists.

[edit]Fear mongering

Main article: Fear mongering

Fear mongering (or **scaremongering**) is the use of fear to influence the opinions and actions of others towards some specific end. The feared object or subject is sometimes exaggerated, and the pattern of fear mongering is usually one of repetition, in order to continuously reinforce the intended effects of this tactic to frighten citizens and influence their political views. It often states that if something is or is not done, a disastrous event will occur, and that by voting for or against it this can be prevented. The end result is the voter being scared into changing their vote or opinion to one more favorable to the person that is fear mongering. In a good marginalization, there is reason to believe the claim because the professional says the claim is true. This is because a person who is a legitimate expert is more likely to be right than wrong when making considered claims within his area of expertise.

- Example: "If we don't approve the McCarran Internal Security Act the Soviets will take over America."

- Example: "We cannot wait for the final proof – the smoking gun – that could come in the form of a mushroom cloud." (US President George W. Bush, making the case for declaring war on Iraq)[7][8]
- Example: "If we don't get rid of Workchoices, your employer will sack you or cut your pay in half."

[edit]Compliance professionals

A compliance professional is an expert that utilizes and perfects means of gaining media influence. Though the means of gaining influence are common, their aims vary from political, economic, to personal. Thus the label of compliance professional applies to diverse groups of people, including propagandists, marketers, pollsters, salespeople and political advocates.

[edit]Techniques

Means of influence include, but are not limited to, the methods outlined in Influence Science and Practice:

- Reciprocation
- Commitment and Consistency
- Social Proof
- Liking
- Authority
- Scarcity

Additionally, techniques like framing and less formal means of effective obfuscation, such as the use of logical fallacies, are used to gain compliance.

See also

- Brand
- Concentration of media ownership
- Consumer confusion
- Consumer psychology
- Consumer science
- Crowd manipulation
- Deception
- Demagogy
- Front organization
- Gatekeeping (communication)
- Guerrilla marketing
- Index of public relations-related articles
- Influence Science and Practice
- McCarthyism
- Mass media
- Media regulation
- Media transparency
- Meme
- News management
- Promotion (marketing)
- Psychological manipulation
- SourceWatch
- Spin (public relations)
- Under color of authority

Notable Compliance Experts

- Edward Bernays
- Joseph Goebbels
- Ivy Lee
- Frank Luntz

Notable Media Manipulation Theorists

- Silvio Berlusconi
- Edward Bernays
- Noam Chomsky
- Michael Moore

- Ideology
- Indoctrination
- Viral marketing

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- "The Persuaders" *Frontline*
- "Understanding Jargon: A Short Bibliography" by Philip E. Agre
- "10 Strategies of media manipulation and disinformation, (Noam Chomsky)."

Psychological manipulation

From Wikipedia, the free encyclopedia

Psychological manipulation is a type of social influence that aims to change the perception or behavior of others through underhand, deceptive, or even abusive tactics.[1] By advancing the interests of the manipulator, often at the other's expense, such methods could be considered exploitative, abusive, devious, and deceptive. Social influence is not necessarily negative. For example, doctors can try to persuade patients to change unhealthy habits. Social influence is generally perceived to be harmless when it respects the right of the influenced to accept or reject and is not unduly coercive. Depending on the context and motivations, social influence may constitute underhanded manipulation.

Contents

[hide]

1 Requirements for successful manipulation

2 How manipulators control their victims

○ 2.1 According to Braiker

○ 2.2 According to Simon

3 Vulnerabilities exploited by manipulators

4 Motivations of manipulators

5 Psychological conditions of manipulators

6 Basic manipulative strategy of a psychopath

○ 6.1 1. Assessment phase

○ 6.2 2. Manipulation phase

○ 6.3 3. Abandonment phase

7 See also

8 References

9 Other references

○ 9.1 Books

○ 9.2 Academic Journals

[edit]Requirements for successful manipulation

According to George K. Simon, successful psychological manipulation primarily involves the manipulator:

1. concealing aggressive intentions and behaviors.
2. knowing the psychological vulnerabilities of the victim to determine what tactics are likely to be the most effective.
3. having a sufficient level of ruthlessness to have no qualms about causing harm to the victim if necessary.

Consequently the manipulation is likely to be accomplished through covert aggressive (relational aggressive or passive aggressive) means.[2]

[edit]How manipulators control their victims

[edit]**According to Braiker**

Harriet Braiker[1] identified the following basic ways that manipulators control their victims:

- Positive reinforcement: includes praise, superficial charm, superficial sympathy (crocodile tears), excessive apologizing, money, approval, gifts, attention, facial expressions such as a forced laugh or smile, and public recognition.
- Negative reinforcement: involves removing one from a negative situation as a reward, e.g. "You won't have to do your homework if you allow me to do this to you."
- Intermittent or partial reinforcement: Partial or intermittent negative reinforcement can create an effective climate of fear and doubt. Partial or intermittent positive reinforcement can encourage the victim to persist - for example in most forms of gambling, the gambler is likely to win now and again but still lose money overall.
- Punishment: includes nagging, yelling, the silent treatment, intimidation, threats, swearing, emotional blackmail, the guilt trip, sulking, crying, and playing the victim.
- Traumatic one-trial learning: using verbal abuse, explosive anger, or other intimidating behavior to establish dominance or superiority; even one incident of such behavior can condition or train victims to avoid upsetting, confronting or contradicting the manipulator.

[edit]**According to Simon**

Simon[2] identified the following manipulative techniques:

- Lying: It is hard to tell if somebody is lying at the time they do it, although often the truth may be apparent later when it is too late. One way to minimize the chances of being lied to is to understand that some personality types (particularly psychopaths) are experts at the art of lying and cheating, doing it frequently, and often in subtle ways.

- Lying by omission: This is a very subtle form of lying by withholding a significant amount of the truth. This technique is also used in propaganda.

- Denial: Manipulator refuses to admit that he or she has done something wrong.

- Rationalization: An excuse made by the manipulator for inappropriate behavior. Rationalization is closely related to spin.

- Minimization: This is a type of denial coupled with rationalization. The manipulator asserts that his or her behavior is not as harmful or irresponsible as someone else was suggesting, for example saying that a taunt or insult was only a joke.

- Selective inattention or selective attention: Manipulator refuses to pay attention to anything that may distract from his or her agenda, saying things like "I don't want to hear it".

- Diversion: Manipulator not giving a straight answer to a straight question and instead being diversionary, steering the conversation onto another topic.

- Evasion: Similar to diversion but giving irrelevant, rambling, vague responses, weasel words.

- Covert intimidation: Manipulator throwing the victim onto the defensive by using veiled (subtle, indirect or implied) threats.

- Guilt tripping: A special kind of intimidation tactic. A manipulator suggests to the conscientious victim that he or she does not care enough, is too selfish or has it easy. This usually results in the victim feeling bad, keeping them in a self-doubting, anxious and submissive position.

- Shaming: Manipulator uses sarcasm and put-downs to increase fear and self-doubt in the victim. Manipulators use this tactic to make others feel unworthy and therefore defer to them. Shaming tactics can be very subtle such as a fierce look or glance, unpleasant tone of voice, rhetorical comments, subtle sarcasm. Manipulators can make one feel ashamed for even daring to challenge them. It is an effective way to foster a sense of inadequacy in the victim.

- Playing the victim role ("poor me"): Manipulator portrays him- or herself as a victim of circumstance or of someone else's behavior in order to gain pity, sympathy or evoke compassion and thereby get something from another. Caring and conscientious people cannot stand to see anyone suffering and the manipulator often finds it easy to play on sympathy to get cooperation.

- Vilifying the victim: More than any other, this tactic is a powerful means of putting the victim on the defensive while simultaneously masking the aggressive intent of the manipulator.

- Playing the servant role: Cloaking a self-serving agenda in guise of a service to a more noble cause, for example saying he is acting in a certain way for "obedience" and "service" to God or a similar authority figure.

- Seduction: Manipulator uses charm, praise, flattery or overtly supporting others in order to get them to lower their defenses and give their trust and loyalty to him or her.

- Projecting the blame (blaming others): Manipulator scapegoats in often subtle, hard-to-detect ways.

- Feigning innocence: Manipulator tries to suggest that any harm done was unintentional or that they did not do something that they were accused of. Manipulator may put on a look of surprise or indignation. This tactic makes the victim question his or her own judgment and possibly his own sanity.

- Feigning confusion: Manipulator tries to play dumb by pretending he or she does not know what the victim is talking about or is confused about an important issue brought to his attention.

- Brandishing anger: Manipulator uses anger to brandish sufficient emotional intensity and rage to shock the victim into submission. The manipulator is not actually angry, he or she just puts on an act. He just wants what he wants and gets "angry" when denied.

[edit]Vulnerabilities exploited by manipulators

According to Braiker,[1] manipulators exploit the following vulnerabilities (buttons) that may exist in victims:

- the "disease to please"
- addiction to earning the approval and acceptance of others
- Emotophobia (fear of negative emotion; *i.e.* a fear of expressing anger, frustration or disapproval)
- lack of assertiveness and ability to say no
- blurry sense of identity (with soft personal boundaries)
- low self-reliance
- external locus of control

According to Simon,[2] manipulators exploit the following vulnerabilities that may exist in victims:

- naïveté - victim finds it too hard to accept the idea that some people are cunning, devious and ruthless or is "in denial" if he or she is being victimized.
- over-conscientiousness - victim is too willing to give manipulator the benefit of the doubt and see their side of things in which they blame the victim.
- low self-confidence - victim is self-doubting, lacking in confidence and assertiveness, likely to go on the defensive too easily.

- over-intellectualization - victim tries too hard to understand and believes the manipulator has some understandable reason to be hurtful.
- emotional dependency - victim has a submissive or dependent personality. The more emotionally dependent the victim is, the more vulnerable he or she is to being exploited and manipulated.

Manipulators generally take the time to scope out the characteristics and vulnerabilities of their victim.

According to Kantor,[3] the following are vulnerable to psychopathic manipulators:

- too dependent - dependent people need to be loved and are therefore gullible and liable to say yes to something to which they should say no.
- too immature - has impaired judgment and believes the exaggerated advertising claims.
- too naïve - cannot believe there are dishonest people in the world, taking for granted that if there were they would not be allowed to operate.
- too impressionable - overly seduced by charmers. For example, they might vote for the seemingly charming politician who kisses babies.
- too trusting - people who are honest often assume that everyone else is honest. They are more likely to commit themselves to people they hardly know without checking credentials, etc., and less likely to question so-called experts.
- too lonely - lonely people may accept any offer of human contact. A psychopathic stranger may offer human companionship for a price.
- too narcissistic - narcissists are prone to falling for unmerited flattery.
- too impulsive - make snap decisions about, for example, what to buy or whom to marry without consulting others.
- too altruistic - the opposite of psychopathic: too honest, too fair, too empathetic.
- too frugal - cannot say no to a bargain even if they know the reason why it is so cheap.
- too materialistic - easy prey for loan sharks or get-rich-quick schemes.
- too greedy - the greedy and dishonest may fall prey to a psychopath who can easily entice them to act in an immoral way.
- too masochistic - lack self-respect and so unconsciously let psychopaths take advantage of them. They think they deserve it out of a sense of guilt.
- the elderly - the elderly can become fatigued and less capable of multi-tasking. When hearing a sales pitch they are less likely to consider that it could be a con. They are prone to giving money to someone with a hard-luck story. See elder abuse.

[edit]Motivations of manipulators

Manipulators can have various possible motivations, including:[1]

- the need to advance their own purposes and personal gain at virtually any cost to others
- a strong need to attain feelings of power and superiority in relationships with others
- a want and need to feel in control (aka. control freak)
- a desire to gain a feeling of power over others in order to raise their perception of self-esteem

[edit]Psychological conditions of manipulators

> The **neutrality of this section is disputed**. Please do not remove this message until the dispute is resolved. *(January 2012)*

Manipulators may have any of the following psychological conditions:[1]

- machiavellian personality
- narcissistic personality disorder
- paranoid personality disorder
- borderline personality disorder
- dependent personality disorder
- histrionic personality disorder
- passive–aggressive behavior
- type A angry personalities
- antisocial personality disorder
- behavioral addiction

[edit]Basic manipulative strategy of a psychopath

According to Robert D. Hare and Paul Babiak,[4] psychopaths are always on the lookout for individuals to scam or swindle. The psychopathic approach includes three phases:

[edit]1. Assessment phase

Some psychopaths are opportunistic, aggressive predators who will take advantage of almost anyone they meet, while others are more patient, waiting for the perfect, innocent victim to cross their path. In each case, the psychopath is constantly sizing up the potential usefulness of an individual as a source of money, power, sex, or influence. Some psychopaths enjoy a challenge while others prey on people who are vulnerable. During the assessment phase, the psychopath is able to determine a potential victim’s weak points and will use those weak points to seduce.

[edit]2. Manipulation phase

Once the psychopath has identified a victim, the manipulation phase begins. During the manipulation phase, a psychopath may create a persona or mask, specifically designed to ‘work’ for his or her target. A psychopath will lie to gain the trust of their victim. Psychopaths' lack of empathy and guilt allows them to lie with impunity; they do not see the value of telling the truth unless it will help get them what they want.

As interaction with the victim proceeds, the psychopath carefully assesses the victim's persona. The victim's persona gives the psychopath a picture of the traits and characteristics valued in the victim. The victim's persona may also reveal, to an astute observer, insecurities or weaknesses the victim wishes to minimize or hide from view. As an ardent student of human behavior, the psychopath will then gently test the inner strengths and needs that are part of the victim's private self and eventually build a personal relationship with the victim.

The persona of the psychopath - the “personality” the victim is bonding with - does not really exist. It is built on lies, carefully woven together to entrap the victim. It is a mask, one of many, custom-made by the psychopath to fit the victim's particular psychological needs and expectations. The victimization is predatory in nature; it often leads to severe financial, physical or emotional harm for the individual. Healthy, real relationships are built on mutual respect and trust; they are based on sharing honest thoughts and feelings. The victim's mistaken belief that the psychopathic bond has any of these characteristics is the reason it is so successful.

[edit]3. Abandonment phase

The abandonment phase begins when the psychopath decides that his or her victim is no longer useful. The psychopath abandons his or her victim and moves on to someone else. In the case of romantic relationships, a psychopath will usually seal a relationship with their next target before abandoning his or her current victim.

Sometimes, the psychopath has three individuals on whom he or she is running game: the one who has been recently abandoned, who is being toyed with and kept in the picture in case the other two do not work out; the one who is currently being played and is about to be abandoned; and the third, who is being groomed by the psychopath, in anticipation of abandoning the current "mark".

[edit]See also

- Advertising
- Appeal to emotion
- Brainwashing
- Bullying
- Culture of fear
- Coercion
- Coercive persuasion
- Common sense
- Confidence trick

- Critical thinking
- Crowd manipulation
- Demagogy
- Dirty tricks
- Discrediting tactic
- Dissimulation
- Dumbing down
- Emotional blackmail
- Enabling
- Fallacy
- Fear mongering
- Fraud
- Gaslighting
- Half-truth
- Interrogation
- List of confidence tricks
- List of fallacies
- Martyrdom video
- Media manipulation
- Mind control
- Mobbing
- Personal boundaries
- Persuasion
- Propaganda
- Propaganda: The Formation of Men's Attitudes
- Psychological abuse
- Psychopathic thought processes
- Rhetoric
- Shaming
- Sheeple
- Shills
- Smear campaign
- Social engineering (political science)
- Social engineering (security)
- Social influence
- Sophistry

- Spin
- Subliminal stimuli
- Victim blaming
- Victimology
- Weasel words
- Whispering campaign
- Workplace bullying

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Relational aggression

From Wikipedia, the free encyclopedia

Relational aggression, also known as **covert aggression**,[1] or covert bullying[2] is a type of aggression in which harm is caused through damage to one's relationships or social status.[2][3]Although it can be used in many contexts and among different age groups, relational aggression among adolescents, in particular, has received a lot of attention with the help of popular media including movies like ''Mean Girls'' and books like ''Odd Girl Out'' by R. Simmons (2003) and ''Queen Bees and Wannabes'' by R. Wiseman (2003). Relational aggression can have various lifelongconsequences. This type of aggression has been primarily observed and studied among girls.[3] However, research shows that it is quite commonly used by boys as well.

Contents

[hide]

1 Overview
  - 1.1 Definition

2 Forms

3 Prevalence
  - 3.1 Gender differences

4 Sociometric status

5 Different participation roles
  - 5.1 Victims
  - 5.2 Bullies
    - 5.2.1 Hostile Attributional Bias
  - 5.3 Bully-victims
  - 5.4 Bystanders
    - 5.4.1 Bully- reinforcers and assistants
    - 5.4.2 Victim-defenders
    - 5.4.3 Outsiders

6 Consequences of victimization
  - 6.1 Differences in consequences of victimization for victims and bully-victims
  - 6.2 Suicide ideation and attempts

7 Environmental buffers and prevention programs
  - 7.1 Prevention programs

8 See also

9 References

10 Further reading
  ○ 10.1 Books
  ○ 10.2 Academic articles
11 External links

[edit]Overview

Peers become increasingly significant in adolescence. Peer relationships are especially important for adolescents' healthy psychological development: peers provide many new behavioral models and feedback essential for successful identity formation and development of one’s sense of self.[4][5] Interactions with peers encourage positive practice of autonomy and independent decision-making skills,[6] as well as are essential for healthy sexual development including the development of the capacity for intimate friendships and learning appropriate sexual behavior.[7] Peer relationships are also very important for determining how much adolescents value school, how much effort they put into it, and how well they perform in class.[8][9] However, quite frequently adolescents take part in peer relationships that are harmful for their psychological development. Adolescents tend to form various cliques and belong to different crowds based on their activity interests, music and clothing preferences, as well as their cultural or ethnic background.[10] Such groups differ in their sociometric or popularity status, which often create unhealthy, aggression-victimization based dynamics between groups. Different forms of aggression can also be used to control dynamics and sociometric status within a group. Sometimes aggression is directed to an individual rather than to any apparent social group. Primary reasons for victimization include looks and speech; adolescents are also frequently bullied because of a disability, particular ethnicity, or religion.[11][12]

[edit]**Definition**

Relational aggression is defined as a type of aggression that is "intended to harm other adolescents through deliberate manipulation of their social standing and relationships." [13] Relational aggression, according to Dan Olweus [14] is a type of bullying. Bullying in general, is defined as physically or psychologically violent re-occurring and not provoked acts, where the bully and victim have unequal physical strength or/and psychological power.[15] These key conditions apply to all types of bullying: verbal, physical, relational.[14]

[edit]Forms

The main three forms of relational aggression include:[13]

- Excluding others from social activities;
- Damaging victim's reputations with others by spreading rumors and gossiping about the victim, or humiliating him/her in front of others;
- Withdrawing attention and friendship.

Psychological manipulation and coercion can also be considered as a type of relational aggression.

Most recent research has been focusing on cyber-bullying, which is a relatively new yet increasingly popular way of engaging in both verbal and relational aggression due to growing importance of various communication and technology devices in modern societies.[16] Some studies show that internet meanness is more common among girls than boys.[12]

[edit]Prevalence

Many studies in the U.S. and Europe show that at least 30% of students report having been bullied in one or another way. Some studies indicate even higher percentages of victimization.[11]Bullying in schools happens in all forms and at various ages, although peer bullying has the highest prevalence in 6th-8th grades.[17] The most common forms of bullying are verbal with relational, or various forms of ostracism, coming in second.[18]

[edit]Gender differences

Although it can be used by both genders, relational aggression is more commonly associated with girls.[11] Findings of a study by Rivers and Smith [19] have shown that while verbal aggression occurs with similar frequency in both sexes, direct physical aggression is more common among boys and indirect aggression is more common among girls. In another study by Baldry [20] it was found that boys are more likely to engage in bullying behaviors such as threats, physical harm, rejection, and name-calling, while girls are most likely to use name-calling, teasing, rumors, rejection, and taking personal belongings. Based on these findings, girls do seem to use relational aggression somewhat more than boys. In addition, recent international research shows that both genders tend to use relational aggression, but girls are more aware and distressed by it.[21][22][23] For example, a study by Horn [24] found that girls are more likely to say that it is morally wrong to exclude someone based on their crowd membership. However, this tendency for girls to engage in relational aggression more so than for boys might be influenced by different socialization of male and female children and different social expectations associated with gender roles. Boys are allowed to be more physically and verbally aggressive than girls. Some research shows that there are certain implications when boys and girls engage in gender-atypical aggression as girls who are more physically aggressive or boys who are highly relationally aggressive are more maladjusted than their peers, who engage in gender- typical aggression.[25]

[edit]Sociometric status

Sociometric status, commonly referred as popularity, is one of the most significant predictors of victimization or bullying as differences in popularity can be associated with differences in social power. It is commonly believed that aggressive adolescents belong to rejected social groups. However, some research shows that they can be popular among their peers.[26][27] Rodkin et al. (2000),[28] for example, describes two types of popular boys: "model" boys, who are "physically and academically competent, friendly and neither shy nor aggressive." [13] Second type is described as "tough" and such adolescents are "aggressive, physically competent, and average or below average in friendliness, academic competence, and shyness.".[13] Usually the more popular aggressive adolescents use instrumental aggression and not reactive aggression.[29][30] Instrumental aggression is defined as behavior that is deliberate and planned while reactive aggression is unplanned and impulsive.[13] Relational aggression can be greatly instrumental for maintaining the popularity status of a group among other groups, as well specific relationship and status dynamics inside a group. Ojala and Nesdale (2004) [31] found that both victims and bullies normally come from rejected groups. Bullies chose to bully students, who are members of their social out-groups that are similar to their own in- group as a result of threatened distinctiveness. Hence, the need to maintain a unique social identity and status can be one of the causes to engage in bullying. Using relational aggression to maintain a particular social order inside the group has been mostly observed in girl groups: if some member of the group becomes too popular and this causes imbalance in the group, other members might start rumors about the overly popular girl to diminish her status.[32] Amanda Rose (2004) [33] claims that the main purpose of using relational aggression in first place is to enhance or maintain one's social status. Many skills that are needed to be popular are also essential for being "successful" at employing relational aggression, e.g. ability to "read" people and adjust one's behavior accordingly, etc.[13] The researcher suggests that some aggressive boys are popular because they are also good at using relational aggression, and, therefore, their primary reason for popularity is not their physical but relational aggression.

[edit]Different participation roles

Research shows that there are three types of rejected or unpopular adolescents who are very likely to be involved in bullying behavior.[34][35][36][37][38][39] First type includes adolescents who are overly aggressive: they tend to get into fights, get involved in antisocial activities, and are often involved in bullying; second type includes adolescents who are withdrawn or timid and exceedingly shy and inhibited and who are more likely to be victims; third- aggressive- withdrawn- type adolescents tend to have trouble controlling their hostility, but they are also very shy and nervous about initiating friendships. The latter are likely to be bully-victims. Other students- bystanders can also choose between several roles: victim-defender, bully-reinforcer and/or assistant, and outsiders.

[edit]**Victims**

Victims or the unpopular withdrawn children are excessively anxious, lack social skills needed to initiate new contacts or break into a group activity.[40] Their lack of confidence combined with submissiveness make them perfect targets for bullying.[41][42] Some of the most common underlying reasons for bullying include low socioeconomic status, disability, and obesity.[43][44][45]Research shows that in comparison with other adolescents victims often use worse problem solving strategies.[46] They often score less than their bullies and defenders in the tests of moral competence and theory of mind.[47] Moral competence refers to the ability to carefully consider both the consequences and prior believes in determining how morally wrong or right or wrong are one's actions. Victims seemed to focus primarily on the outcomes and not being as good in integrating the moral beliefs. They have difficulties in social skills, and social problem solving, as well as emotional regulation.[48] And because of their lack of social competence, victims score low on peer acceptance and popularity.[49][50] Victims are often overly sensitive to being rejected, which might originate in their relationships with parents.[51]

[edit]Bullies

Bullies, despite being quite morally competent, tend to engage in morally wrong behaviors because of several reasons, including a lack of moral compassion.[47] In general, bullies seem to engage in a kind of cold cognition and have a good theory of mind. They also have an average to good social intelligence.[47] These skills seem to be especially important in order to use relational aggression in an instrumental manner—for achieving specific social goals. As mentioned previously, male and female bullies usually score differently on sociometric measures. Male bullies often fall in the socially rejected category [49][50] while female bullies tend to fall in the controversial category. They can be popular yet not liked.[49]

[edit]Hostile Attributional Bias

Many unpopular aggressive kids seem to engage in hostile attributional bias when analyzing the actions of others: they are more likely to interpret other children's behavior as hostile while it is not,[52][53] which can cause the perpetuation of their aggressive behaviors.

[edit]Bully-victims

Bully- victims are adolescents who have both experienced aggression directed towards them and have themselves engaged in bullying. They often choose to be bully assistants or reinforcers.[54]Seeing others victimized can serve as a buffer against some psychological problems, for which these adolescents are at risk (see Consequences of victimization below). In comparison to all other groups, bully-victims are the worst off regarding their psychological adjustment and problems. They are least liked among the peers.[11]

[edit]Bystanders

Although early research has mostly focused on victims and bullies, currently more and more attention has been given to the roles of other students, or bystanders: bully-reinforcer's and assistants, victim-defenders, and outsiders.[49]

[edit]Bully- reinforcers and assistants

Bully-reinforcers and assistants do not normally initiate aggressive actions themselves, but they support, reinforce, and/or assist the bully. They often have rather large friendship networks when compared to outsiders, victims, and their defenders.[49] These individuals are similar to bullies in regards of their personal characteristics. Female bully- reinforcers and assistants usually score low on social acceptance and high on rejection by their peers while male bully assistants have average scores on both and bully- reinforcers are often quite popular among their peers.[49] The characteristic that is common among all these individuals across both genders is low level of empathy.[54]

[edit]Victim-defenders

Victim-defenders are individuals who stand up for the victim. They are usually popular among their peers,[47][49] although occasionally rejected and victimized adolescents take on the defender's role.[49] Defenders like to befriend other defenders and usually belong to the smallest social network of all other previously mentioned groups.[49] Defenders have both advanced moral competence and high level of compassion. They also score high on the theory of mind tests. They are usually very morally engaged, have a high sense of responsibility, and self-efficacy.[47] They are also good at emotion regulation.[55]

[edit]Outsiders

Outsiders are adolescents who like to stay away from the conflict situations, participate in spreading rumors, or actively support either side. They usually befriend other outsiders. Both male and female outsiders usually score below average on both social acceptance and rejection by their peers.[49] In general, the best predictor for whether an adolescent will choose to be a defender or an outsider in a particular situation is their relationship to the victim and/or bully.[54] Occasionally, adolescents will feel more comfortable to intervene if they are friends with the offender.[56] However, in general they will take the side of the bully or victim based on who they know better.[57] Bullies are more likely to be friends with other bullies, as well as their reinforcers, and assistants, while victims befriend other victims.

[edit]Consequences of victimization

Main article: Victimization

There are serious negative consequences associated with being involved in any aggressive behaviors. And while problems with peers might be a result of one's poor social skills and maladjustment, difficulty making friends, and regular experience of aggression can also be a cause of many short and long term negative consequences on one's mental health and academic and professional achievements.[58][59][60] Experience of relational aggression, peer rejection, and unpopularity are shown to be linked to various problems in adolescence, which are listed below:[61][62][63][64]

- depression
- behavior problems;
- poor social skills;

- lack of close peer relationships;
- difficulties in academic performance;
- low school engagement;
- undermined feelings of competence;
- low self-esteem
- occasionally distress due to victimization can also result in physical symptoms such as wetting, abdominal pain, or/and headaches.[65]

Some negative effects persist into adulthood. In a longitudinal study, Dan Olweus (2003)[41] found that young adults, who were victims of bullying in adolescence, had more symptoms of depression and lower self-esteem than did their non-victimized peers. Victims are also much more likely to engage in heavy smoking later in life.[66] Decreased academic engagement due to victimization can have some long term consequences as victim's lower educational attainment in adulthood leads to lower earnings.[67]

[edit]Differences in consequences of victimization for victims and bully-victims

There are differences in consequences among the children who are rejected and aggressive, also known as bully-victims, and children who are rejected and withdrawn, also referred to as simplyvictims. Aggressive individuals often have conduct problems and are involved in antisocial activity.;[36][68][69][70][71] withdrawn children feel exceedingly lonely, at risk of low self-esteem, depression, and diminished social competence.[70][72] Adolescents, who are both aggressive and withdrawn, are at greatest risk for various mental and behavioral problems [39][73][74]

[edit]Suicide ideation and attempts

Although victims respond to bullying in various ways, some of the most common ways include avoidance or escape behaviors, such as not going to school and running away from home. However, in some extreme cases, suicide attempts might occur.[75] Compared to non-victims, victims exhibit increased levels of suicidal ideation.[12][76][77] and are more likely to have attempted suicide[12][78][79][80] Researcher Y.S. Kim (2005)[79] found that there are some gender differences as victimized female but not male students were at significantly greater risk for suicidal ideation. Further research has shown that increased risk for suicidal ideation and attempts depend on a specific interaction between gender, frequency, and type of aggression. Relational or indirect aggression was found to be associated with depression and suicidal ideation among both genders.[81] According to Brustein and Klomek (2007),[12] victimization at any frequency increased the risk of depression, ideation, and attempts among girls, while only frequent victimization increased the risk of depression and ideation among males, yet Katliala-Heino et al.(1999) [82] found that severe ideation was associated with frequent victimization only among girls.

[edit]Environmental buffers and prevention programs

Some adolescents are more resilient to victimization due to their personal characteristics, but there are some environmental factors such as having a best friend or great family support can decrease the risk for many negative consequences associated with victimization.[83] In addition, research shows that support from teachers can be a significant environmental factor for higher academic achievement and school engagement. It can also increase general well- being in the classroom.[84] Teacher attitudes towards bullying were found to moderate the extend of which victims internalize and feel distressed and express it by avoiding school and similar behavior.[85] Close teacher- student relationship moderates perceived safety in the classroom, and higher perceived safety is directly linked to better classroom concentration and improved coping strategies [86] Therefore, supportive friends, family, and teachers can be great buffers for victimized students against all negative effects of victimization. Interestingly, witnessing the harassment of others can also reduce some harmful effects of being victimized:[87] victims-only feel more humiliated and angry than victims-witnesses on the same day. Being singled out and picked on feels worse than being one of many victimized students. This explains why in ethnically diverse schools victimized students experience worse psychological outcomes when their ethnic group is in majority, because then they are more likely to attribute it to their personal shortcomings and not to their group membership.[88]

[edit]Prevention programs

There are many prevention programs, which have been designed to improve social skills of the unpopular and victimized adolescents. Prevention programs usually focus on one of the three strategies: 1) teaching social skills like self-expression, leadership, and questioning of others about themselves;[89][90] 2) have unpopular adolescents participate in group activities together with the popular adolescents under supervision of psychologists; 3) some programs focus on training on how to combine and use one's cognitive and behavioral abilities, including social problem solving.[91][92] Different types of programs have shown to have somewhat different effects: the first type seems to best improve adolescent's ability to get along with others while the second type has shown to improve adolescents' self-conceptions and their acceptance by others.[93] One of the examples of the programs using the third approach is PATHS (Promoting Alternative Thinking Strategies) teaches skills needed for successfully analyzing social situations, controlling one's negative emotions, and making more rational social decisions. It has been shown to successfully reduce behavioral problems among elementary school children.[94] However, it is difficult to prevent relational aggression from happening as oftentimes adolescents who use it are seen to be more popular among their peers.[33]

[edit]See also

- Adolescence
- Bullying

- Clique
- Crowds (adolescence)
- Cyber-bullying
- Mobbing
- Peer victimization
- Physical abuse
- Psychological abuse
- Psychological manipulation
- Psychological trauma
- Relational disorder
- Shame
- Shunning
- Spiritual abuse

External links

- Website on Relational Aggression
- The Ophelia Project
- Youth & Family Resource Center, Inc.

Passive–aggressive behavior

From Wikipedia, the free encyclopedia

(Redirected from Passive aggressive)

This article is about a type of behavior. For The Radio Dept. album, see Passive Aggressive: Singles 2002–2010.

Passive–aggressive behavior is a category of interpersonal interactions characterised by an obstructionist or hostile manner that indicates aggression, or, in more general terms, expressing aggression in non-assertive, subtle (i.e. passive or indirect) ways. It can be seen in some cases as a personality trait or disorder marked by a pervasive pattern of negative attitudes and passive, usually disavowed, resistance in interpersonal or occupational situations.

Passive aggressive behavior should not be confused with passive resistance (also called conscientious objection). In conflict theory passive resistance is a rational response to demands that may simply be disagreed with. Passive–aggressive behavior should also not be confused with covert aggression (a behavior better described as catty), which consists of deliberate, active, but carefully veiled hostile acts and is distinctively different in character from the non-assertive style of passive aggression.[1]

Passive aggressive behavior can manifest itself as learned helplessness, procrastination, hostility masquerading as jokes, stubbornness, resentment, sullenness, or deliberate/repeated failure to accomplish requested tasks for which one is (often explicitly) responsible.[2]

Contents

[hide]

1 Signs and symptoms

2 In the workplace

3 Diagnosis as a personality disorder

- ○ 3.1 DSM-IV Appendix B
- ○ 3.2 ICD-10
- ○ 3.3 Millon's subtypes

4 Causes

5 Treatment

6 History

7 See also

8 References

9 Bibliography

[edit]Signs and symptoms

The book “Living with the Passive–Aggressive Man” lists 11 observations that may help identify passive–aggressive behavior:[3]

- Ambiguity and cryptic speech: a means of creating a feeling of insecurity in others or of disguising one’s own insecurities;
- Intentional inefficiency, e.g. being late or forgetting things, as a way to exert control or to punish;
- Convenient forgetfulness: to win any argument with a dishonest denial of actual events;
- Cold shoulder response: withdrawing into long silences to avoid either confronting or connecting with others.
- Fear of competition;
- Fear of dependency;
- Fear of intimacy as a means to act out anger: the passive–aggressive often cannot trust; because of this, they guard themselves against becoming intimately attached to someone;
- Making chaotic situations;
- Making excuses for non–performance in work teams;
- Obstructionism;
- Sulking;

- Victimization response: instead of recognizing one’s own weaknesses, tendency to blame others for own failures.

A passive–aggressive person may not display all of these behaviors.

[edit]In the workplace

Main article: Workplace conflict

Passive aggressive behavior from workers and managers is damaging to team unity and productivity. Warner says that "We need to understand that this kind of passive aggressive behavior means a challenge to any managers’ ability to achieve project goals — resulting in a team’s tasks never delivered in time or quality, or general sabotaging of the team’s productivity."[4] In workers, it can lead to sabotage of projects and the creation of a hostile environment. In managers, it can end up stifling team creativity. De Angelis says "It would actually make perfect sense that those promoted to positions might often be those who on the surface appear to be agreeable, diplomatic and supportive, yet who are actually dishonest, backstabbing saboteurs behind the scenes."[5][*page needed*]

[edit]Diagnosis as a personality disorder

DSM-IV Appendix B

Personality disorders
Cluster A (odd)
• Paranoid • Schizoid • Schizotypal
Cluster B (dramatic)
• Antisocial • Borderline Histrionic • Narcissistic
Cluster C (anxious)

- Avoidant
- Dependent
- Obsessive-compulsive

Not specified

- Depressive
- **Passive–aggressive**
- Sadistic
- Self-defeating
- Psychopathy

- v
- t
- e

Passive–aggressive personality disorder was listed as an Axis II personality disorder in the DSM-III-R, but was moved in the DSM-IV to Appendix B ("Criteria Sets and Axes Provided for Further Study") because of controversy and the need for further research on how to also categorize the behaviors in a future edition. As an alternative, the diagnosis personality disorder not otherwise specified may be used instead.

The DSM-IV Appendix B definition is as follows:[6]

A. A pervasive pattern of negativistic attitudes and passive resistance to demands for adequate performance, beginning by early adulthood and present in a variety of contexts, as indicated by four (or more) of the following:

  1. passively resists fulfilling routine social and occupational tasks
  2. complains of being misunderstood and unappreciated by others
  3. is sullen and argumentative
  4. unreasonably criticizes and scorns authority
  5. expresses envy and resentment toward those apparently more fortunate
  6. voices exaggerated and persistent complaints of personal misfortune
  7. alternates between hostile defiance and contrition

B. Does not occur exclusively during major depressive episodes and is not better accounted for by dysthymic disorder.

[edit]ICD-10

Passive–aggressive personality disorder

Classification and external resources

ICD-10	F60.8
ICD-9	301.84

The World Health Organization's ICD-10 lists passive–aggressive personality disorder under *(F60.8) Other specific personality disorders.*

[edit]Millon's subtypes

The psychologist Theodore Millon has proposed four subtypes of 'negativist' ('passive–aggressive').[7] Any individual negativist may exhibit none or one of the following:

- **circuitous negativist** – including dependent features
- **abrasive negativist** – including sadistic features
- **discontented negativist** – including depressive features
- **vacillating negativist** – including borderline features

[edit]Causes

Passive–aggressive disorder may stem from a specific childhood stimulus[8] (e.g., alcohol/drug addicted parents) in an environment where it was not safe to express frustration or anger. Families in which the honest expression of feelings is forbidden tend to teach children to repress and deny their feelings and to use other channels to express their frustration.

Children who sugarcoat hostility may have difficulties being assertive. Never developing better coping strategies or skills for self-expression, they can become adults who, beneath a "seductive veneer", "harbor vindictive intent", in the words of a US congressman psychologist and a writer therapist.[9] Alternatively individuals may simply have difficulty being as directly aggressive or assertive as others. Martin Kantor suggests three areas that contribute to passive–aggressive anger in individuals: conflicts about dependency, control, and competition.[10]

[edit]Treatment

Kantor suggests a treatment approach using psychodynamic, supportive, cognitive, behavioral and interpersonal therapeutic methods. These methods apply to both the passive aggressive person and their target victim, according to Kantor, a retired Staff Psychiatrist for the Department of Veterans Affairs Medical Center in New Jersey.[11]

[edit]History

Passive aggressive behavior was first defined clinically by Colonel William Menninger during World War II in the context of men's reaction to military compliance.

Menninger described soldiers who were not openly defiant but expressed their aggressiveness “by passive measures, such as pouting, stubbornness, procrastination, inefficiency, and passive obstructionism” due to what Menninger saw as an "immaturity" and a reaction to "routine military stress".[12]

According to some psychoanalytic views, noncompliance is not indicative of true passive–aggressive behavior, which may instead be defined as the manifestation of emotions that have been repressed based on a self-imposed need for acceptance.

In the first version of the *Diagnostic and Statistical Manual of Mental Disorders*, DSM-I, in 1952, the passive–aggressive was defined in a narrow way, grouped together with the passive-dependent.

The DSM-III-R stated in 1987 that passive aggressive disorder is typified by among other things "fail[ing] to do the laundry or to stock the kitchen with food because of procrastination and dawdling."[12]

The widespread common social experience of passive aggressive behaviour, primarily in the workplace or in shared-living situations, had led to popular websites like *Passive–Aggressive Notes*that post and share passive aggressive emails and notes.

[edit]See also

- Counterproductive work behavior
- Gossip
- Malicious compliance
- Mind games
- Passivity
- Psychological manipulation
- Relational aggression

- Social undermining
- Oppositional defiant disorder
- *Passive–Aggressive Notes*

Defence mechanisms

From Wikipedia, the free encyclopedia

For the biological concept, see Antipredator adaptation.

Part of a series of articles on

Psychoanalysis

Concepts[show]

Important figures[show]

Important works[show]

Schools of thought[show]

Training[show]

Psychology portal

- V
- T
- E

In Freudian psychoanalytic theory, **defence mechanisms** (or **defense mechanisms**) are psychological strategies brought into play by theunconscious mind[1] to manipulate, deny, or distort reality (through processes including, but not limited to, Repression, Identification, orRationalization),[2] and to maintain a socially acceptable self-image or self-schema.[3]

Healthy persons normally use different defences throughout life. An ego defense mechanism becomes pathological only when its persistent use leads to maladaptive behaviour such that the physical and/or mental health of the individual is adversely affected. The purpose of ego defence mechanisms is to protect the mind/self/ego from anxiety and/or social sanctions and/or to provide a refuge from a situation with which one cannot currently cope.[4]

Defence mechanisms are more accurately[*citation needed*] referred to as ego defence mechanisms, and can thus be categorized as occurring when theid impulses are in conflict with each other, when the id impulses conflict with super-ego values and beliefs, and when an external threat is posed to the ego.

The term "defence mechanism" is often thought[*who?*] to refer to a definitive singular term for personality traits which arise due to loss or traumatic experiences, but more accurately refers to several types of reactions which were identified during and after Sigmund Freud's daughter Anna's time.

Defence mechanisms are sometimes confused with coping strategies.[5]

One resource used to evaluate these mechanisms is the *Defense Style Questionnaire* (DSQ-40).[6][7]

Contents

[hide]

1 Structural model: The id, ego, and superego
  1. 1.1 Definitions of individual psyche structures
  2. 1.2 Primary and secondary processes
  3. 1.3 The reality principle
  4. 1.4 Formation of the superego
  5. 1.5 The ego's use of defense mechanisms

2 Theories and classifications

3 Vaillant's categorization of defence mechanisms
  1. 3.1 Level 1 - Pathological
  2. 3.2 Level 2 - Immature
  3. 3.3 Level 3 - Neurotic
  4. 3.4 Level 4 - Mature

4 See also

5 References

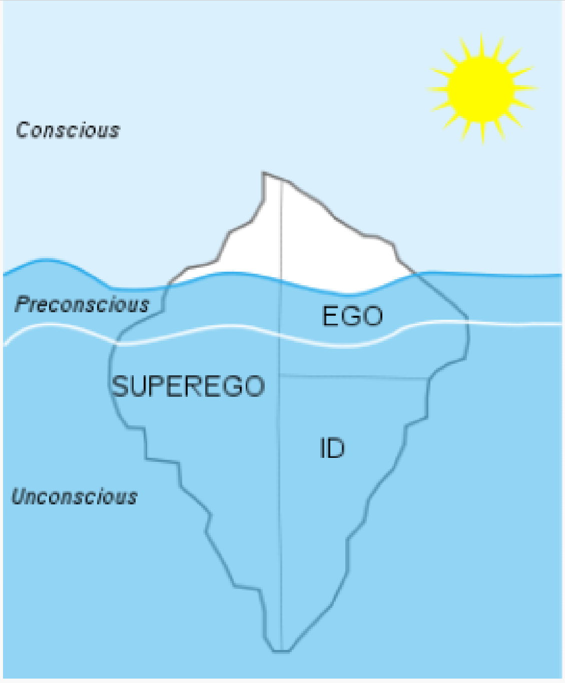
6 External links

[edit]Structural model: The id, ego, and superego

The concept of id impulses comes from Sigmund Freud’s structural model. According to this theory, id impulses are based on the pleasure principle: instant gratification of one's own desires and needs. Sigmund Freud believed that the id represents biological instinctual impulses in ourselves, such as aggression (Thanatos or the Death instinct) and sexuality (Eros or the Life instinct).

For example, when the id impulses (e.g. desire to have sexual relations with a stranger) conflict with the superego (e.g. belief in societal conventions of not having sex with unknown persons), unsatisfied feelings of anxiousness or feelings of anxiety come to the surface. To reduce these negative feelings, the ego might use defence mechanisms (conscious or unconscious blockage of the id impulses).

Freud believed that conflicts between these two structures resulted in conflicts associated with psychosexual stages.



The iceberg metaphor is often used to explain the psyche's parts in relation to one another.

[edit]Definitions of individual psyche structures

Freud proposed three structures of the psyche or personality:

- **Id**: The id is the unconscious reservoir of the libido, the psychic energy that fuels instincts and psychic processes. It is a selfish, childish, pleasure-oriented part of the personality with no ability to delay gratification.

2. **Superego**: It is making decision regarding the pleasure perceived by the id and the morals of superego. Internalized societal and parental standards of "good" and "bad", "right" and "wrong" behaviour.

- **Ego**: Individual's morals divided into the conscious - security rules and regulations. the moderator between the id and superego which seeks compromises to pacify both. It can be viewed as our "sense of time and place",

[edit]Primary and secondary processes

In the ego, there are two ongoing processes. First there is the unconscious primary process, where the thoughts are not organized in a coherent way, the feelings can shift, contradictions are not in conflict or are just not perceived that way, and condensations arise. There is no logic and no time line. Lust is important for this process. By contrast, there is the conscious secondary process, where strong boundaries are set and thoughts must be organized in a coherent way. Most conscious thoughts originate here.

[edit]The reality principle

Id impulses are not appropriate in civilized society, so society presses us to modify the pleasure principle in favour of the reality principle; that is, the requirements of the external world.

[edit]Formation of the superego

The superego forms as the child grows and learns parental and social standards. The superego consists of two structures: the conscience, which stores information about what is "bad" and what has been punished, and the ego ideal, which stores information about what is "good" and what one "should" do or be.

[edit]The ego's use of defense mechanisms

When anxiety becomes too overwhelming, it is then the place of the ego to employ defense mechanisms to protect the individual. Feelings of guilt, embarrassment and shame often accompany the feeling of anxiety. In the first definitive book on defense mechanisms, *The Ego and the Mechanisms of Defense* (1936),[8] Anna Freud introduced the concept of signal anxiety; she stated that it was "not directly a conflicted instinctual tension but a signal occurring in the ego of an anticipated instinctual tension".[9]

The signaling function of anxiety is thus seen as a crucial one and biologically adapted to warn the organism of danger or a threat to its equilibrium. The anxiety is felt as an increase in bodily or mental tension and the signal that the organism receives in this way allows it the possibility of taking defensive action regarding the perceived danger. Defense mechanisms work by distorting the id impulses into acceptable forms, or by unconscious or conscious blockage of these impulses.[10]

[edit]Theories and classifications

The list of defense mechanisms is huge and there is no theoretical consensus on the number of defense mechanisms. Classifying defence mechanisms according to some of their properties (i.e. underlying mechanisms, similarities or connections with personality) has been attempted. Different theorists have different categorizations and conceptualizations of defence mechanisms. Large reviews of theories of defense mechanisms are available from Paulhus, Fridhandler and Hayes (1997)[11] and Cramer (1991).[12] The *Journal of Personality* published a special issue on defence mechanisms (1998).[13]

Otto F. Kernberg (1967) developed a theory of borderline personality organization of which one consequence may be borderline personality disorder. His theory is based on ego psychological object relations theory. Borderline personality organization develops when the child cannot integrate positive and negative mental objects together. Kernberg views the use of primitive defense mechanisms as central to this personality organization. Primitive psychological defenses are projection, denial, dissociation or splitting and they are called borderline defense mechanisms. Also, devaluation and projective identification are seen as borderline defenses.[14]

In George Eman Vaillant's (1977) categorization, defenses form a continuum related to their psychoanalytical developmental level.[15] Vaillant's levels are:

- Level I - pathological defenses (i.e. psychotic denial, delusional projection)
- Level II - immature defenses (i.e. fantasy, projection, passive aggression, acting out)
- Level III - neurotic defenses (i.e. intellectualization, reaction formation, dissociation, displacement, repression)
- Level IV - mature defenses (i.e. humour, sublimation, suppression, altruism, anticipation)

Robert Plutchik's (1979) theory views defences as derivatives of basic emotions. Defense mechanisms in his theory are (in order of placement in circumplex model): reaction formation, denial, repression, regression, compensation, projection, displacement, intellectualization.[16]

The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) published by the American Psychiatric Association (1994) includes a tentative diagnostic axis for defence mechanisms.[17]This classification is largely based on Vaillant's hierarchical view of defenses, but has some modifications. Examples include: denial, fantasy, rationalization, regression, isolation, projection, and displacement.

[edit]Vaillant's categorization of defence mechanisms

[edit]Level 1 - Pathological

The mechanisms on this level, when predominating, almost always are severely pathological. These six defences, in conjunction, permit one to effectively rearrange external experiences to eliminate the need to cope with reality. The pathological users of these mechanisms frequently appear irrational or insane to others. These are the "psychotic" defences, common in overtpsychosis. However, they are found in dreams and throughout childhood as well.

They include:

- **Delusional Projection**: Delusions about external reality, usually of a persecutory nature.
- **Conversion**: the expression of an intrapsychic conflict as a physical symptom; some examples include blindness, deafness, paralysis, or numbness. This phenomena is sometimes called*hysteria*.[18]
- **Denial**: Refusal to accept external reality because it is too threatening; arguing against an anxiety-provoking stimulus by stating it doesn't exist; resolution of emotional conflict and reduction of anxiety by refusing to perceive or consciously acknowledge the more unpleasant aspects of external reality.
- **Distortion**: A gross reshaping of external reality to meet internal needs.
- **Splitting**: A primitive defence. Negative and positive impulses are split off and unintegrated. Fundamental example: An individual views other people as either innately good or innately evil, rather than as an individual who is defined by his or her actions.
- **Extreme projection**: The blatant denial of a moral or psychological deficiency, which is perceived as a deficiency in another individual or group.

[edit]Level 2 - Immature

These mechanisms are often present in adults. These mechanisms lessen distress and anxiety provoked by threatening people or by uncomfortable reality. Excessive use of such defenses is seen as socially undesirable in that they are immature, difficult to deal with and seriously out of touch with reality. These are the so-called "immature" defences and overuse almost always leads to serious problems in a person's ability to cope effectively. These defences are often seen in major depression and personality disorders.

They include:

- **Acting out**: Direct expression of an unconscious wish or impulse in action, without conscious awareness of the emotion that drives that expressive behaviour.
- **Fantasy**: Tendency to retreat into fantasy in order to resolve inner and outer conflicts.
- **Idealization**: Unconsciously choosing to perceive another individual as having more positive qualities than he or she may actually have.[19]
- **Passive aggression**: Aggression towards others expressed indirectly or passively such as using procrastination.
- **Projection**: Projection is a primitive form of paranoia. Projection also reduces anxiety by allowing the expression of the undesirable impulses or desires without becoming consciously aware of them; attributing one's own unacknowledged unacceptable/unwanted thoughts and emotions to another; includes severe prejudice, severe jealousy, hypervigilance to external danger, and "injustice collecting". It is shifting one's unacceptable thoughts, feelings and impulses within oneself onto someone else, such that those same thoughts, feelings, beliefs and motivations are perceived as being possessed by the other.

- **Projective identification**: The object of projection invokes in that person precisely the thoughts, feelings or behaviours projected.
- **Somatization**: The transformation of negative feelings towards others into negative feelings toward self, pain, illness, and anxiety.

[edit]Level 3 - Neurotic

These mechanisms are considered neurotic, but fairly common in adults. Such defences have short-term advantages in coping, but can often cause long-term problems in relationships, work and in enjoying life when used as one's primary style of coping with the world.

They include:

- **Displacement**: Defense mechanism that shifts sexual or aggressive impulses to a more acceptable or less threatening target; redirecting emotion to a safer outlet; separation of emotion from its real object and redirection of the intense emotion toward someone or something that is less offensive or threatening in order to avoid dealing directly with what is frightening or threatening. For example, a mother may yell at her child because she is angry with her husband.
- **Dissociation**: Temporary drastic modification of one's personal identity or character to avoid emotional distress; separation or postponement of a feeling that normally would accompany a situation or thought.
- **Hypochondriasis**: An excessive preoccupation or worry about having a serious illness.
- **Intellectualization**: A form of isolation; concentrating on the intellectual components of a situation so as to distance oneself from the associated anxiety-provoking emotions; separation of emotion from ideas; thinking about wishes in formal, affectively bland terms and not acting on them; avoiding unacceptable emotions by focusing on the intellectual aspects (e.g. isolation,rationalization, ritual, undoing, compensation, magical thinking).
- **Isolation**: Separation of feelings from ideas and events, for example, describing a murder with graphic details with no emotional response.
- **Rationalization (making excuses)**: Where a person convinces him or herself that no wrong was done and that all is or was all right through faulty and false reasoning. An indicator of this defence mechanism can be seen socially as the formulation of convenient excuses - making excuses.
- **Reaction formation**: Converting unconscious wishes or impulses that are perceived to be dangerous into their opposites; behaviour that is completely the opposite of what one really wants or feels; taking the opposite belief because the true belief causes anxiety. This defence can work effectively for coping in the short term, but will eventually break down.
- **Regression**: Temporary reversion of the ego to an earlier stage of development rather than handling unacceptable impulses in a more adult way.

- **Repression**: The process of attempting to repel desires towards pleasurable instincts, caused by a threat of suffering if the desire is satisfied; the desire is moved to the unconscious in the attempt to prevent it from entering consciousness;[20] seemingly unexplainable naivety, memory lapse or lack of awareness of one's own situation and condition; the emotion is conscious, but the idea behind it is absent.[*citation needed*]
- **Undoing**: A person tries to 'undo' an unhealthy, destructive or otherwise threatening thought by acting out the reverse of unacceptable. Involves symbolically nullifying an unacceptable or guilt provoking thought, idea, or feeling by confession or atonement.
- **Withdrawal**: Withdrawal is a more severe form of defence. It entails removing oneself from events, stimuli, interactions, etc. under the fear of being reminded of painful thoughts and feelings.

[edit]Level 4 - Mature

These are commonly found among emotionally healthy adults and are considered mature, even though many have their origins in an immature stage of development. They have been adapted through the years in order to optimize success in life and relationships. The use of these defences enhances pleasure and feelings of control. These defences help us to integrate conflicting emotions and thoughts, whilst still remaining effective. Those who use these mechanisms are usually considered virtuous.

They include:

- **Altruism**: Constructive service to others that brings pleasure and personal satisfaction.
- **Anticipation**: Realistic planning for future discomfort.
- **Humour**: Overt expression of ideas and feelings (especially those that are unpleasant to focus on or too terrible to talk about) that gives pleasure to others. The thoughts retain a portion of their innate distress, but they are "skirted round" by witticism, for example Self-deprecation.
- **Identification**: The unconscious modelling of one's self upon another person's character and behaviour.
- **Introjection**: Identifying with some idea or object so deeply that it becomes a part of that person.
- **Sublimation**: Transformation of negative emotions or instincts into positive actions, behaviour, or emotion.
- **Thought suppression**: The conscious process of pushing thoughts into the preconscious; the conscious decision to delay paying attention to an emotion or need in order to cope with the present reality; making it possible to later access uncomfortable or distressing emotions whilst accepting them.

[edit]See also

- Coping (psychology)
- Narcissistic defences
- Psychological resistance
- Maladaptive daydreaming

Poisoning the well

From Wikipedia, the free encyclopedia

This article is about the rhetorical device. For other uses, see Poisoning the well (disambiguation).

Poisoning the well (or attempting to **poison the well**) is a rhetorical device where adverse information about a target is pre-emptively presented to an audience, with the intention of discrediting or ridiculing everything that the target person is about to say. Poisoning the well can be a special case of argumentum ad hominem, and the term was first used with this sense by John Henry Newman in his work *Apologia Pro Vita Sua* (1864).[1] The origin of the term lies in well poisoning, an ancient wartime practice of pouring poison into sources of fresh water before an invading army, to diminish the invading army's strength.

Contents

[hide]

1 Examples
2 Structure
3 See also
4 References
5 External links

[edit]Examples

In general usage, poisoning the well is the provision of *any* information that may produce a biased result. For example, if a woman tells her friend, "I think I might buy this beautiful dress", then asks her friend's opinion of the dress, she has "poisoned the well", as her previous comment could affect her friend's response.

An even simpler example of poisoning the well is by tautology and definition, or circular reasoning. This is similar to equivocation, where the use of words communicate a confusing meaning (often called a subtle lie). For example, if one starts an argument with "Everything I say is correct, no matter what you say", the well is poisoned and nothing a person says (be it true or false) will matter by the initiator's definition. An example of this rhetorical strategy is attributed to Michel Foucault by John Searle,[2] regarding philosopher Jacques Derrida: "Michel Foucault once characterized Derrida's prose style to me as "*obscurantisme terroriste*." The text is written so obscurely that you can't figure out exactly what the thesis is (hence "*obscurantisme*") and then when one criticizes it, the author says, "*Vous m'avez mal compris; vous êtes idiot*" [roughly, "*You misunderstood me; you are an idiot*"] (hence "*terroriste*")."

[edit]Structure

Poisoning the well can take the form of an (explicit or implied) argument, and is considered by some philosophers an informal fallacy.[1]

A poisoned-well "argument" has the following form:

1. Unfavorable information (be it true or false, relevant or irrelevant) about person A (the target) is presented by another. (e.g., "Before you listen to my opponent, may I remind you that he has been in jail.")
2. Implicit conclusion: "Therefore, any claims made by person A cannot be relied upon".

A subcategory of this form is the application of an unfavorable attribute to any future opponents, in an attempt to discourage debate. (For example, "That's my stance on funding the public education system, and anyone who disagrees with me hates children.") Any person who steps forward to dispute the claim will then risk applying the tag to him or herself in the process.

A poisoned-well "argument" can also be in this form:

1. Unfavorable definitions (be it true or false) which prevent disagreement (or enforce affirmative position)
2. Any claims without first agreeing with above definitions are automatically dismissed.

[edit]See also

- Ad hominem
- Appeal to ridicule
- Black propaganda
- Fruit of the poisonous tree
- Guilt by association
- Prolepsis
- Scorched earth

[edit]References

1. ^ a b Philosophical society.com - Logical Fallacies
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[edit]External links

- Newman Reader - Apologia (1865) - Preface

Argumentum ad baculum

From Wikipedia, the free encyclopedia

"Threat of force" redirects here. It is not to be confused with Threat of force (public international law) or Threat display.

This article **relies largely or entirely upon a single source**. Relevant discussion may be found on the talk page. Please help improve this article by introducing citations to additional sources. *(September 2011)*

Argumentum ad baculum (Latin for *argument to the cudgel* or *appeal to the stick*), also known as **appeal to force**, is an argument where force, coercion, or the *threat of force*, is given as a justification. It is a specific case of the negative form of an argument to the consequences.

Contents

[hide]

1 As a logical argument

2 Examples

3 The Non-fallacious *Ad Baculum*

4 See also

5 References

6 External links

[edit]As a logical argument

A fallacious argument based on *argumentum ad baculum* generally proceeds as follows:

> If x accepts P as true, then Q.
>
> Q is a punishment on x.
>
> Therefore, **P is not true**.

This form of argument is an informal fallacy, because the attack Q may not necessarily reveal anything about the truth value of the premise P. This fallacy has been identified since the Middle Ages by many philosophers. This is a special case of *argumentum ad consequentiam*, or "appeal to consequences".

[edit]Examples

10. Employee: I do not think the company should invest its money into this project.
11. Employer: Be quiet or you will be fired.

- Student: I do not think it is fair that the deadline for our essay is so soon.

- Teacher: Do not argue with me or I will send you to detention.

In both of these examples, the authority figures ended the argument with a threat, but this does not automatically mean they are correct. They did not win the argument because they did not refute the other person's contention.

[edit]The Non-fallacious *Ad Baculum*

An *ad baculum* argument is fallacious when the punishment is not meaningfully related to the conclusion being drawn. Many *ad baculum* arguments are not fallacies.[1] For example:

If you drive while drunk, you will be put in jail.

You want to avoid going to jail.

Therefore you should not drive while drunk.

This is called a non-fallacious *ad baculum*. The inference is valid because the existence of the punishment is not being used to draw conclusions about the nature of drunk driving itself, but about people for whom the punishment applies. It would become a fallacy if one proceeded from the first premise to argue, for example, that drunk driving is immoral or bad for society. Specifically, the above argument would become a fallacious *ad baculum* if the conclusion stated:

Therefore you *will not* drive while drunk.

if using the form as above:

If x does P, then Q.

Q is a punishment on x.

Therefore, x should not do P.

[edit]See also

3. Bullying
4. Conformity
5. *In terrorem*
6. Logical fallacy
7. Management by perkele
8. Pascal's Wager

[edit]References

- ^ Woods, John. Irvine, Andrew. Walton, Douglas. *Argument, Critical Thinking, Logic and the Fallacies*

[edit]External links

- Fallacy Files article on Argumentum ad Baculum

Argumentum ad populum

From Wikipedia, the free encyclopedia

In logic, an ***argumentum ad populum*** (Latin for "**appeal to the people**") is a fallacious argument that concludes a proposition to be true because many or most people believe it. In other words, the basic idea of the argument is: "*If many believe so, it is so.*"

This type of argument is known by several names,[1] including **appeal to the masses**, **appeal to belief**, **appeal to the majority**, **appeal to democracy**, **argument by consensus**, **consensus fallacy**, **authority of the many**, and **bandwagon fallacy**, and in Latin as ***argumentum ad numerum*** ("appeal to the number"), and ***consensus gentium*** ("agreement of the clans"). It is also the basis of a number of social phenomena, including communal reinforcement and the bandwagon effect. The Chinese proverb "three men make a tiger" concerns the same idea.

Contents

[hide]

1 Examples
2 Explanation
  ○ 2.1 Evidence
3 Exceptions
  ○ 3.1 Social convention
  ○ 3.2 Safety
  ○ 3.3 Language
4 Reversals
5 See also
6 References
7 External links

[edit]Examples

This fallacy is sometimes committed while trying to convince a person that a widely popular thought is true.

- Nine out of ten of my constituents oppose the bill, therefore it is a bad idea.
- Nine out of ten of my fellow congressmen favor the bill, therefore it is a good idea.

Other examples:

- Fifty million Elvis fans can't be wrong.
- Everyone's doing it.
- In a court of law, the jury vote by majority; therefore they will always make the correct decision.
- Google gives more hits when this spelling is applied, therefore this has to be the correct spelling.

[edit]Explanation

The *argumentum ad populum* is a red herring and genetic fallacy. It appeals on probabilistic terms; given that 75% of a population answer A to a question where the answer is unknown, the argument states that it is reasonable to assume that the answer is indeed A. In cases where the answer can be known but is not known by a questioned entity, the appeal to majority provides a possible answer with a relatively high probability of correctness.

There is the problem of determining just how many are needed to have a majority or consensus. Is merely greater than 50% significant enough and why? Should the percentage be larger, such as 80 or 90 percent, and how does that make a real difference? Is there real consensus if there are one or even two people who have a different claim that is proven to be true?

It is logically fallacious because the mere fact that a belief is widely-held is not necessarily a guarantee that the belief is correct; if the belief of any individual can be wrong, then the belief held by multiple persons can also be wrong. The argument that because 75% of people polled think the answer is A implies that the answer is A, this argument fails, because if opinion did determine truth, then there be no way to deal with the discrepancy between the 75% of the sample population that believe the answer is A and 25% who are of the opinion that the answer is not A. However small the percentage of those polled is distributed among any remaining answers, this discrepancy by definition disproves any guarantee of the correctness of the majority. In addition, this would be true even if the answer given by those polled were unanimous, as the sample size may be insufficient, or some fact may be unknown to those polled that, if known, would result in a different distribution of answers.

This fallacy is similar in structure to certain other fallacies that involve a confusion between the *justification* of a belief and its *widespread acceptance* by a given group of people. When an argument uses the appeal to the beliefs of a group of supposed experts, it takes on the form of an appeal to authority; if the appeal is to the beliefs of a group of respected elders or the members of one's community over a long period of time, then it takes on the form of an appeal to tradition.

One who commits this fallacy may assume that individuals commonly analyze and edit their beliefs and behaviors. This is often not the case (see conformity).

The argumentum ad populum can be a valid argument in inductive logic; for example, a poll of a sizeable population may find that 90% prefer a certain brand of product over another.
A cogent(strong) argument can then be made that the next person to be considered will also prefer that brand, and the poll is valid *evidence* of that claim. However, it is unsuitable as an argument fordeductive reasoning as *proof*, for instance to say that the poll proves that the preferred brand is superior to the competition in its composition or that everyone prefers that brand to the other.

[edit]**Evidence**

- One could claim that smoking is a healthy pastime, since millions of people do it. However, knowing the dangers of smoking, we instead say that smoking *is not* a healthy pastime *despite* the fact that millions do it.
- One could claim Angelina Jolie is the best-looking woman in the world, because she is regularly voted as such, although the sample she is part of (celebrities) is insufficient, and ideals of beauty are arguably culturally determined and thus arbitrary to a significant degree. For instance, overweight bodies have been considered more beautiful in some cultures (Such as Mauritania) because only the wealthy could afford to eat enough to become overweight or obese. By contrast, contemporary high fashion generally involves women who have been criticized for not eating enough.
- At a time in history when most people believed the world was flat, one could have claimed the world is flat because most believed it.
- Advocates of heliocentrism, such as Galileo Galilei were strongly suppressed, despite scientific evidence, now recognized as factual, that supported heliocentrism at the expense ofgeocentrism.

[edit]Exceptions

This section **does not cite any references or sources**. Please help improve this section by adding citations to reliable sources. Unsourced material may be challenged and removed. *(September 2012)*

Appeal to belief is valid only when the question is whether the belief exists. Appeal to popularity is therefore valid only when the questions are whether the belief is widespread and to what degree. I.e., ad populum only proves that a belief is *popular*, not that it is *true*. In some domains, however, it is popularity rather than other strengths that makes a choice the preferred one.

[edit]**Social convention**

Matters of social convention, such as etiquette or polite manners, depend upon the wide acceptance of the convention. As such, *argumentum ad populum* is not fallacious when referring to the popular belief about what is polite or proper:

> *"Most people in Russia think that it is polite for men to kiss each other in greeting. Therefore, it is polite for men to kiss each other in greeting in Russia."*

Social conventions can change, however, and sometimes very quickly. Thus, the fact that everyone in Russia this year thinks that it is polite to kiss can not be used as evidence that everyone always believed that, or that they *should* always believe it.

The philosophical question of moral relativism asks whether such arguments apply to statements of morals.

[edit]Safety

Whether to follow a tenet decided by popularity rather than logical design may be a matter of safety or convenience:

> *"Nearly all Americans think that you should drive on the right side of the road. Therefore, you should drive on the right side of the road in the United States."*
>
> In this case, the choice of which side to drive on is basically arbitrary. However, to avoid head-on collisions, everyone on the road must agree on it. In many cases, what is safe to do depends on what others expect one will do, and thus on the "popularity" of that choice.

[edit]Language

Linguistic descriptivists argue that correct grammar, spelling, and expressions are defined by the language's speakers, especially in languages which do not have a central governing body. According to this viewpoint, if an incorrect expression is commonly used, it becomes correct. In contrast, linguistic prescriptivists believe that incorrect expressions are incorrect regardless of how many people use them.

[edit]Reversals

In some circumstances, a person may argue that the fact that most people believes X implies that X is *false*. This line of thought is closely related to the ad hominem, appeal to emotion,poisoning the well, and guilt by association fallacies given that it invokes a person's contempt for the general populace or something about the general populace in order to persuade them that most are wrong about X. The ad populum reversal commits exactly the same logical flaw as the original fallacy given that the idea "X is true" is inherently separate from the idea that "Most people believe X".

For example, consider the arguments:

- "Are you going to be a mindless conformist drone drinking milk and water like everyone else, or will you wake up and drink my product?"[2]
- "Everyone likes The Beatles and that probably means that they didn't have nearly as much talent as <Y band>, which didn't sell out."[3]

- "The German people today consists of the Auschwitz generation, with every person in power being guilty in some way. How on earth can we buy the generally held propaganda that the Soviet Union is imperialistic and totalitarian? Clearly, it must not be."[4]
- "Most people still either hate gays or just barely tolerate their existence. How can you still buy their other line that claims that pederasty is wrong?"[5]
- "Everyone loves <A actor>. <A actor> must be nowhere near as talented as the devoted and serious method actors that aren't so popular like <B actor>."

In general, the reversal usually goes: *Most people believe A and B are both true. B is false. Thus, A is false.* The similar fallacy of chronological snobbery is not to be confused with the ad populum reversal. Chronological snobbery is the claim that if belief in both X and Y was popularly held in the past and if Y was recently proved to be untrue then X must also be untrue. That line of argument is based on a belief in historical progress and not—like the ad populum reversal is—on whether or not X and/or Y is currently popular.

See also

Philosophy portal

- Cognitive dissonance
- Communal reinforcement
- Consensus reality
- Conventional wisdom
- Fallacies
- Fundamental attribution bias
- Groupthink
- *Reductio ad Hitlerum*
- Scientific consensus
- *The Wisdom of Crowds*
- Three men make a tiger
- Truth by consensus

[edit]References

1. ^ Austin Cline. Argumentum ad Populum
2. ^ See: "MTN DEW is a non-conformist brand that's all about taking life to the next level." PowerPoint Presentation
3. ^ These ideas are paraphrased from this presentation by authors Andrew Potter and Joseph Heath in which they state:
   - For example, everybody would love to listen to fabulous underground bands that nobody has ever head of before, but virtually not all of us can do this. Once too many people find out about this great band, then they are no longer underground. And so we say that it's sold out or 'mainstream' or even 'co-opted by the system'. What is really happened is simply that too many people have started buying their albums so that listening to them no longer serves as a source of distinction. The real rebels therefore have to go off and find some new band to listen to that nobody else knows about in order to preserve this distinction and their sense of superiority over others.
4. ^ These ideas are paraphrased from the 'Baader Meinhof Gang' article at the True Crime Library, which states:
   - Gudrun Ensslin may have been wrong about many or most things, she was not speaking foolishly when she spoke of the middle-aged folk of her era as "the Auschwitz generation." Not all of them had been Nazis, of course, but a great many had

> supported Hitler. Many had been in the Hitler Youth and served in the armed forces, fighting Nazi wars of conquest. A minority had ineffectively resisted Nazism but, as a whole, it was a generation coping with an extraordinary burden of guilt and shame... many of the people who joined what would come to be known as the Baader-Meinhof Gang were motivated by an unconscious desire to prove to themselves that they would have risked their lives to defeat Nazism... West Germans well knew. Many of them had relatives in East Germany and were well aware that life under communism was regimented and puritanical at best and often monstrously oppressive.

5. ^ These ideas are paraphrased from "The Pattern of Sexual Politics: Feminism, Homosexuality and Pedophilia" by Harris Mirkin.

See also Pro-pedophile activism#Strategies for promoting acceptance.

[edit]External links

- FallacyFiles.org, Bandwagon Fallacy

Association fallacy

From Wikipedia, the free encyclopedia

"Guilt by association" redirects here. For the compilation album, see Guilt by Association Vol. 1.

An **association fallacy** is an inductive informal fallacy of the type hasty generalization or red herring which asserts that qualities of one thing are inherently qualities of another, merely by an irrelevant association. The two types are sometimes referred to as **guilt by association** and **honor by association**. Association fallacies are a special case of red herring, and can be based on an appeal to emotion.[*citation needed*]

Contents

1 Form

2 Guilt by association

  ○ 2.1 Examples

  ○ 2.2 Guilt by association as an ad hominem fallacy

3 Honor by association

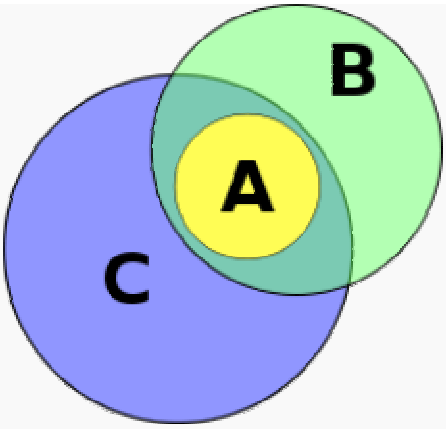
  ○ 3.1 Examples

4 See also

5 Citations

6 External links

[edit]Form



An Euler diagram illustrating the association fallacy. Although A is within B and is also within C, not all of B is within C.

In notation of first-order logic, this type of fallacy can be expressed as $(\exists x \in S : \varphi(x)) \rightarrow (\forall x \in S : \varphi(x))$, meaning "if there exists any *x* in the set *S* so that a property *φ* is true for *x*, then for **all** *x* in *S* the property *φ* must be true."

Premise A is a B

Premise A is also a C

Conclusion Therefore, all Bs are Cs

The fallacy in the argument can be illustrated through the use of an Euler diagram: "A" satisfies the requirement that it is part of both sets "B" and "C", but if one represents this as an Euler diagram, it can clearly be seen that it is possible that a part of set "B" is *not* part of set "C", refuting the conclusion that "all Bs are Cs".

[edit]Guilt by association

For more details on legal and ethical aspects, see Collective guilt.

[edit]**Examples**

Some syllogistic examples of guilt by association:

- John is a con artist. John has black hair. Therefore, all people with black hair are con artists.
- Jane is good at math. Jane is dyslexic. Therefore, all dyslexic people are good at math.
- Simon, Karl, Jared, and Brett are all friends of Josh, and they are all petty criminals. Jill is a friend of Josh; therefore, Jill is a petty criminal.
- All dogs have four legs; my cat has four legs. Therefore, my cat is a dog. (*This argument is made by the wordplay-prone Sir Humphrey Appleby in the BBC sitcom* Yes, Prime Minister*).*

[edit]Guilt by association as an ad hominem fallacy

Guilt by association can sometimes also be a type of ad hominem fallacy, if the argument attacks a person because of the similarity between the views of someone making an argument and other proponents of the argument.

This form of the argument is as follows:

- Source S makes claim C.
- Group G, which is currently viewed negatively by the recipient, also makes claim C.
- Therefore, source S is viewed by the recipient of the claim as associated to the group G and inherits how negatively viewed it is.

An example of this fallacy would be "My opponent for office just received an endorsement from the Puppy Haters Association. Is that the sort of person you would want to vote for?"

[edit]Honor by association

The logical inverse of "guilt by association" is **honor by association**, where one claims that someone or something must be reputable because of the people or organizations that are related to it or otherwise support it. For example:

[edit]Examples

- Citizens of Country X won more Nobel Prizes, gold medals, and literary awards than citizens of Country Y. Therefore, a citizen of Country X is superior to a citizen of Country Y.
- In many advertisements, businesses heavily use the principle of honor by association. For example, an attractive woman will say that a specific product is good. Her attractiveness gives the product good associations.

[edit]See also

- Ad hitlerum
- Ad hominem
- Social stigma

[edit]Citations

- Damer, T. E.; Rudinow, J.; Barry, V. E.; Munson, R.; Black, A.; Salmon, M. H.; Cederblom, J.; Paulsen, D.; Epstein, R. L.; Kernberger, C.; Others, (2009). *Attacking Faulty Reasoning: A Practical Guide to Fallacy-Free Arguments* (6th ed.). Wadsworth. ISBN 978-0-495-09506-4.

- Fallacies: Classical and Contemporary Readings, edited by Hans V. Hansen and Robert C. Pinto (1995).
- Bibliography on Fallacies: http://www.ditext.com/eemeren/bib.html

[edit]External links

- The Fallacy Files Guilt by Association
- Propagandacritic.com "Transfer technique"
- Propagandacritic.com "Testimonial"

Argument from authority

From Wikipedia, the free encyclopedia

(Redirected from Appeal to authority)

Jump to: navigation, search

Argument from authority (*argumentum ad verecundiam*), also **authoritative argument** and **appeal to authority**, is an inductive-reasoning argument that often takes the form of a statistical syllogism.[1] Although certain classes of argument from authority can constitute strong inductive arguments, the appeal to authority is often applied fallaciously. Appeals to authority are always deductively fallacious; even a legitimate authority speaking on his area of expertise may affirm a falsehood, so no testimony of any authority is guaranteed to be true.

Contents

[hide]

- 1 Forms
    - 1.1 Fallacious appeal to authority
- 2 See also
- 3 References

[edit] Forms

The argument from authority (*argumentum ad verecundiam*) can take several forms. As a statistical syllogism, the argument has the following basic structure: [1]

> Most of what authority A has to say on subject matter *S* is correct.
> A says *P* about subject matter *S*.
> Therefore, *P* is correct.

The strength of this authoritative argument depends upon two factors: [1][2]

1. The authority is a legitimate expert on the subject.
2. There exists consensus among legitimate experts in the subject matter under discussion.

The two factors — legitimate expertise and expert consensus — can be incorporated to the structure of the statistical syllogism, in which case, the argument from authority can be structured thus: [2]

> X holds that A is true.
> X is a legitimate expert on the subject matter.
> The consensus of subject-matter experts agrees with X.
> Therefore, there exists a presumption that A is true.

[edit] Fallacious appeal to authority

Fallacious arguments from authority often are the result of failing to meet at least one of the required two conditions (legitimate expertise and expert consensus) structurally required in the forms of a statistical syllogism.[1][2]First, when the inference fails to meet the first condition (inexpert authority), it is an *appeal to inappropriate authority*, which occurs when an inference relies upon a person or a group without relevant expertise or knowledge of the subject matter under discussion.[3]

Second, because the argument from authority is an inductive-reasoning argument — wherein is implied that the truth of the conclusion cannot be guaranteed by the truth of the premises — it also is fallacious to assert that the conclusion *must* be true.[2] Such a determinative assertion is a *logical non sequitur*, because, although the inductive argument might have merit — either probabilistic or statistical — the conclusion does not follow unconditionally, in the sense of being logically necessary.[4][5]

[edit] See also

- Credentialism
- Groupthink
- *Ipse dixit*
- Logical fallacy
- Name-dropping
- Precedent

- What would Jesus do?

[edit] References

1. ^ a b c d Salmon, M. H. (2006). *Introduction to Critical Reasoning*. Mason, OH: Thomson Wadsworth. pp. 118–9.
2. ^ a b c d Gensler, Harry J. (2003). *Introduction to Logic*. New York, NY: Routedge. pp. 333–4.
3. ^ Baronett, Stan (2008). *Logic*. Upper Saddle River, NJ: Pearson Prentice Hall. p. 304.
4. ^ Marguerite H. Foster, Michael L. Martin (eds) *Probability, Confirmation, and Simplicity: Readings in the Philosophy of Inductive Logic* Pub. Odyssey Press 1966
5. ^ Peirce, C. S. *et al.*, *Studies in Logic by members of the Johns Hopkins University* (1883)

Salmon, M. H. (2006). *Introduction to Logic and Critical Thinking*. Mason, OH: Thomson Wadsworth. pp. 118–9.

Appeal to accomplishment

From Wikipedia, the free encyclopedia

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Appeal to accomplishment is a genetic fallacy wherein Person A challenges a thesis put forward by Person B because Person B has not accomplished similar feats or accomplished as many feats as Person C or Person A.[1]

The reverse, appealing to the fact that no one has the proper experience in question and thus cannot prove something is impossible, is a version of an argument from silence. The inverse, saying that a person of a particular type cannot be trusted to speak on a matter (e.g. a rich person cannot speak on the plight of the poor), is a version of ad hominem attack.

Appeals to accomplishment are fallacies only when they are simple appeals to authority. It is not fallacious to rely on the testimony of a person who has attained a certain level of education or experience if they can produce further evidence to back up their positions when required.

[edit]Examples

- *How dare you criticize the prime minister? What do you know about running an entire country?*
- *I'll take your opinions on music seriously when you've released a record that went platinum.*
- *Get back to me when you've built up a multi-billion dollar empire of your own. Until then, shut up.*

[edit]See also

List of fallacies

[edit]References

1. ^ Bennett, Bo. "Appeal to Accomplishment".

Appeal to consequences

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Appeal to consequences, also known as ***argumentum ad consequentiam*** (Latin for "argument to the consequences"), is an argument that concludes a hypothesis (typically a belief) to be either true or false based on whether the premise leads to desirable or undesirable consequences. This is based on an appeal to emotion and is a type of informal fallacy, since the desirability of a consequence does not make it true. Moreover, in categorizing consequences as either desirable or undesirable, such arguments inherently contain subjective points of view.

In logic, appeal to consequences refers only to arguments that assert a conclusion's truth value (*true or false*) without regard to the formal preservation of the truth from the premises; appeal to consequences does not refer to arguments that address a premise's desirability (*good or bad*, or *right or wrong*) instead of its truth value. Therefore, an argument based on appeal to consequences is valid in ethics, and in fact such arguments are the cornerstones of many moral theories, particularly related to consequentialism.

Contents

[hide]

- 1 General form
  - 1.1 Positive form
    - 1.1.1 Examples
  - 1.2 Negative form
    - 1.2.1 Examples
- 2 In law
- 3 See also
- 4 Notes

[edit]General form

An argument based on *appeal to consequences* generally has one of two forms:[1]

[edit]Positive form

If P, then Q will occur.

Q is desirable.

Therefore, P is true.

It is closely related to wishful thinking in its construction.

[edit]Examples

- "Pi is probably a rational number: being rational would make it more elegant."
- "Real estate markets will continue to rise this year: home owners enjoy the capital gains."
- "Humans will travel faster than light: faster-than-light travel would be beneficial for space travel."
- "An afterlife must exist; I want to exist forever".

[edit]Negative form

If P, then Q will occur.

Q is undesirable.

Therefore, P is false.

Appeal to force (*argumentum ad baculum*) is a special instance of this form.

This form somewhat resembles modus tollens but is both different and fallacious, since "Q is undesirable" is not equivalent to "Q is false".

[edit]Examples

- "The axiom of choice must be wrong because it implies the Banach-Tarski paradox, meaning that geometry contradicts common sense."
- "Free will must exist: if it didn't, we would all be machines." (This is also a false dilemma.)
- "If the six men win, it will mean that the police are guilty of perjury, that they are guilty of violence and threats, that the confessions were invented and improperly admitted in evidence and the convictions were erroneous... This is such an appalling vista that every sensible person in the land would say that it cannot be right that these actions should go any further." Lord Denning in his judgment on the Birmingham Six.
- "Objective morality must exist; if it didn't, then it could be considered acceptable to commit atrocities.

[edit]In law

In law, an argument from inconvenience or *argumentum ab inconvenienti*, is a valid type of appeal to consequences. Such an argument would seek to show that a proposed action would have unreasonably inconvenient consequences, as for example a law that would require a person wishing to lend money against a security to first ascertain the borrower's title to the property by inquiring in every single courthouse in the country.

[edit]See also

- Consequentialism
- Affirming the consequent
- Appeal to fear
- Wishful thinking
- Argumentum ad hominem *circumstantial* form
- Pascal's Wager
- Utilitarianism

[edit]Notes

1. ^ FallacyFiles.org - Appeal to Consequences

Appeal to emotion

From Wikipedia, the free encyclopedia

Contents

[hide]

1 Analytical assumptions

2 Unjustifiable

3 Examples

4 Related fallacies

5 References

6 External links

Appeal to emotion or **argumentum ad passiones** is a logical fallacy which uses the manipulation of the recipient's emotions, rather than valid logic, to win an argument. The appeal to emotion fallacy uses emotions as the basis of an argument's position without factual evidence that logically supports the major ideas endorsed by the elicitor of the argument. Also, this kind of thinking may be evident in one who lets emotions and/or other subjective considerations influence one's reasoning process. This kind of appeal to emotion is a type of red herring and encompasses several logical fallacies, including:

- Appeal to consequences
- Appeal to fear
- Appeal to flattery
- Appeal to pity
- Appeal to ridicule
- Appeal to spite
- Wishful thinking

[edit]Analytical assumptions

Instead of facts, persuasive language is used to develop the foundation of an appeal to emotion-based argument. Thus, the validity of the premises that establish such an argument does not prove to be verifiable.[1]

[edit]Unjustifiable

Conclusively, the appeal to emotion fallacy presents a perspective intended to be superior to reason. Appeals to emotion are intended to draw visceral feelings from the acquirer of the information. And in turn, the acquirer of the information is intended to be convinced that the statements that were presented in the fallacious argument are true; solely on the basis that the statements may induce emotional stimulation such as fear, pity and joy. Though these emotions may be provoked by an appeal to emotion fallacy, substantial proof of the argument is not offered, and the argument's premises remain invalid.[2][3][4]

[edit]Examples

- "For the children"
- Reductio ad Hitlerum

[edit]Related fallacies

Other types of fallacies may also overlap with or constitute an appeal to emotion, including:

- Ad hominem attacks
- Guilt by association
- Misleading vividness
- Slippery slope
- Two wrongs make a right (if arguing for revenge)
- Straw man

[edit]References

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2. ^ Kimball, Robert H. “A Plea for Pity.” Philosophy and Rhetoric. Vol. 37, Issue 4. (2004): 301–316. Print.
3. ^ Wheater, Isabella “Philosophy.” Vol.79, Issue 308. (2004): 215–245. Print.
4. ^ Moore, Brooke N., and Kenneth Bruder. Philosophy: The Power of Ideas. New York: McGraw-Hill, 2008. Print.

[edit]External links

- Fallacy Files: Emotional appeal
- Nizkor: Appeal to emotion

Emotional Appeal

Type: Red Herring

Exposition:

An appeal to emotion is a type of argument which attempts to arouse the emotions of its audience in order to gain acceptance of its conclusion. Despite the example of Mr. Spock from the original *Star Trek* television series, emotion is not always out of place in logical thinking. However, there is no doubt that strong emotions can subvert rational thought, and playing upon emotions in an argument is often fallacious.

When are appeals to emotion appropriate, and when are they fallacious? No student would attempt to prove a mathematical theorem by playing upon the teacher's sympathy for the long hours of hard work put into it. Such an appeal would be obviously irrelevant, since either the proof is correct or it is flawed, despite the student's best efforts. In contrast, if the teacher attempts to motivate the student to work on proving the theorem by invoking the specter of a failing grade, this appeal to fear is not irrelevant.

So, one distinction between relevant and fallacious appeals to emotion is based on the distinction between arguments which aim to motivate us to action, and those which are intended to convince us to believe something. Appeals to emotion are always fallacious when intended to influence our beliefs, but they are sometimes reasonable when they aim to motivate us to act. The fact that we desire something to be true gives not the slightest reason to believe it, and the fact that we fear something being true is no reason to think it false; but the desire for something is often a good reason to pursue it, and fear of something else a good reason to flee.

Even when appeals to emotion aim at motivating us, there is still a way that they may fail to be rational, namely, when what we are being persuaded to do has insufficient connection with what is arousing our emotion. For instance, a familiar type of emotional appeal is the appeal to pity or sympathy, which is used by many charities. Photographs of crippled or hungry children are shown in order to arouse one's desire to help them, with the charity trying to motivate you to write a check. However, there may be little or no connection between your check and the poor children you wish to help. Certainly, your money will probably not help the *specific* children you see in such appeals. At best, it may go to help some *similar* children who need help. At worst, it may go into further fundraising efforts, and into the pockets of the people who work for the charity.

In such cases, what is needed is an argument that there is a causal connection between the action motivated by emotion and the circumstances that arouse that emotion. Will writing a check help the pitiful children? Will voting for this candidate help prevent frightening circumstances? If all that a charity or candidate does is arouse emotions, that is no reason to give them money or votes. When we feel strong emotions, we want to do *some*thing, but we need good reasons to believe that the something we do will be effective.

Subfallacies:

- Appeal to Envy (AKA, *Argumentum ad Invidiam*)
- Appeal to Fear (AKA, *Argumentum ad Metum*)
- Appeal to Hatred (AKA, *Argumentum ad Odium*)
- Appeal to Pity (AKA, *Argumentum ad Misericordiam*)
- Appeal to Pride (AKA, *Argumentum ad Superbiam*)
- Wishful Thinking

Description of Appeal to Emotion

An Appeal to Emotion is a fallacy with the following structure:

1. Favorable emotions are associated with X.
2. Therefore, X is true.

This fallacy is committed when someone manipulates peoples' emotions in order to get them to accept a claim as being true. More formally, this sort of "reasoning" involves the substitution of various means of producing strong emotions in place of evidence for a claim. If the favorable emotions associated with X influence the person to accept X as true because they "feel good about X," then he has fallen prey to the fallacy.

This sort of "reasoning" is very common in politics and it serves as the basis for a large portion of modern advertising. Most political speeches are aimed at generating feelings in people so that these feelings will get them to vote or act a certain way. in the case of advertising, the commercials are aimed at evoking emotions that will influence people to buy certain products. In most cases, such speeches and commercials are notoriously free of real evidence.

This sort of "reasoning" is quite evidently fallacious. It is fallacious because using various tactics to incite emotions in people does not serve as evidence for a claim. For example, if a person were able to inspire in a person an incredible hatred of the claim that 1+1 = 2 and then inspired the person to love the claim that 1+1 = 3, it would hardly follow that the claim that 1+1 = 3 would be adequately supported.

It should be noted that in many cases it is not particularly obvious that the person committing the fallacy is attempting to support a claim. In many cases, the user of the fallacy will appear to be attempting to move people to take an action, such as buying a product or fighting in a war. However, it is possible to determine what sort of claim the person is actually attempting to support. In such cases one needs to ask "what sort of claim is this person attempting to get people to accept and act on?" Determining this claim (or claims) might take some work. However, in many cases it will be quite evident. For example, if a political leader is attempting to convince her followers to participate in certain acts of violence by the use of a hate speech, then her claim would be "you should participate in these acts of violence." In this case, the "evidence" would be the hatred evoked in the followers. This hatred would serve to make them favorable inclined towards the claim that they should engage in the acts of violence. As another example, a beer commercial might show happy, scantily clad men and women prancing about a beach, guzzling beer. In this case the claim would be "you should buy this beer." The "evidence" would be the excitement evoked by seeing the beautiful people guzzling the beer.

This fallacy is actually an extremely effective persuasive device. As many people have argued, peoples' emotions often carry much more force than their reason. Logical argumentation is often difficult and time consuming and it rarely has the power to spurn people to action. It is the power of this fallacy that explains its great popularity and wide usage. However, it is still a fallacy.

In all fairness it must be noted that the use of tactics to inspire emotions is an important skill. Without an appeal to peoples' emotions, it is often difficult to get them to take action or to perform at their best. For example, no good coach presents her team with syllogisms before the big game. Instead she inspires them with emotional terms and attempts to "fire" them up. There is nothing inherently wrong with this. However, it is not any acceptable form of argumentation. As long as one is able to clearly distinguish between what inspires emotions and what justifies a claim, one is unlikely to fall prey to this fallacy.

As a final point, in many cases it will be difficult to distinguish an Appeal to Emotion from some other fallacies and in many cases multiple fallacies may be committed. For example, many Ad Hominems will be very similar to Appeals to Emotion and, in some cases, both fallacies will be committed. As an example, a leader might attempt to invoke hatred of a person to inspire his followers to accept that they should reject her claims. The same attack could function as an Appeal to Emotion and a Personal Attack. In the first case, the attack would be aimed at making the followers feel very favorable about rejecting her claims. In the second case, the attack would be aimed at making the followers reject the person's claims because of some perceived (or imagined) defect in her character.

This fallacy is related to the Appeal to Popularity fallacy. Despite the differences between these two fallacies, they are both united by the fact that they involve appeals to emotions. In both cases the fallacies aim at getting people to accept claims based on how they or others feel about the claims and not based on evidence for the claims.

Another way to look at these two fallacies is as follows

Appeal to Popularity

1. Most people approve of X.
2. So, I should approve of X, too.

3. Since I approve of X, X must be true.

Appeal to Emotion

1. I approve of X.
2. Therefore, X is true.

On this view, in an Appeal to Popularity the claim is accepted because most people approve of the claim. In the case of an Appeal to Emotion the claim is accepted because the individualapproves of the claim because of the emotion of approval he feels in regards to the claim.

Examples of Appeal to Emotion

1. The new PowerTangerine computer gives you the power you need. If you buy one, people will envy your power. They will look up to you and wish they were just like you. You will know the true joy of power. TangerinePower.

- Travel Insurance
- Weight loss program
- Weight loss plan
- Internet marketing advertising
- Dieting
- Insurance Travel
- New york hotels
- Diet
- Advertising Online

2. The new UltraSkinny diet will make you feel great. No longer be troubled by your weight. Enjoy the admiring stares of the opposite sex. Revel in your new freedom from fat. You will know true happiness if you try our diet!
3. Bill goes to hear a politician speak. The politician tells the crowd about the evils of the government and the need to throw out the peoople who are currently in office. After hearing the speach, Bill is full of hatred for the current politicians. Because of this, he feels good about getting rid of the old politicians and accepts that it is the right thing to do because of how he feels.

Appeal to fear

From Wikipedia, the free encyclopedia

It has been suggested that this article or section be merged with *fear appeals*. (Discuss) *Proposed since October 2011.*

An **appeal to fear** (also called ***argumentum ad metum*** or ***argumentum in terrorem***) is a fallacy in which a person attempts to create support for an idea by using deception and propaganda in attempts to increase fear and prejudice toward a competitor. The appeal to fear is common in marketing and politics.[1]

Contents

[hide]

1 Logic

2 Example

3 Fear, uncertainty and doubt

4 As persuasion

5 See also

6 References

7 External links

[edit]Logic

This fallacy has the following argument form:

> Either P or Q is true.
>
> Q is frightening.
>
> Therefore, P is true.

The argument is invalid. The appeal to emotion is used in exploiting existing fears to create support for the speaker's proposal, namely P. Also, often the false dilemma fallacy is involved, suggesting Q is the proposed idea's sole alternative.

[edit]Example

- "If you continue to drink, you will die early as your father did."
- "If you cannot graduate from high school, you will live in poverty for the rest of your life."
- "Voting for him is the same as voting for the terrorists."
- "If you tell a lie, then no one will ever believe what you say again." [2]
- "If you hold your breath for a long time, you will die"

[edit]Fear, uncertainty and doubt

Fear, uncertainty and doubt (FUD) is the appeal to fear in sales or marketing; in which a company disseminates negative (and vague) information on a competitor's product. The term originated to describe misinformation tactics in the computer hardware industry and has since been used more broadly. FUD is "implicit coercion" by "any kind of disinformation used as a competitive weapon."[3] FUD creates a situation in which buyers are encouraged to purchase by brand, regardless of the relative technical merits. Opponents of certain large computer corporations[who?] state that the spreading of fear, uncertainty, and doubt is an unethical marketing technique that these corporations consciously employ.

[edit]As persuasion

Fear appeals are often used in marketing and social policy, as a method of persuasion. Fear is an effective tool to change attitudes,[4] which are moderated by the motivation and ability to process the fear message. Examples of fear appeal include reference to social exclusion, and getting laid-off from one's job,[5] getting cancer from smoking or involvement in car accidents and driving.

Fear appeals are *nonmonotonic*, meaning that the level of persuasion does not increase in proportion to the amount of fear that is used. A study of public service messages on AIDS found that if the messages were too aggressive or fearful, they were rejected by the subject; a moderate amount of fear is the most effective attitude changer.[5]

Others argue that it is not the level of fear that is decisive changing attitudes via the persuasion process. Rather, as long as a scare-tactics message includes a recommendation to cope with the fear, it can work.[6]

[edit]See also

- Appeal to emotion
- Appeal to force
- Embrace, extend and extinguish
- List of fallacies
- Scareware
- The terrorists have won

[edit]References

1. ^ Fallacies: alphabetic list (full list)
2. ^ Changing Minds Appeal to Fear"
3. ^ Raymond, Eric S. "FUD". *The Jargon File.*
4. ^ [1]
5. ^ a b Solomon. Zaichkowsky, Polegato. Consumer Behaviour Pearson, Toronto. 2005
6. ^ [2]

[edit]External links

- Propaganda critic: Fear appeal

"The streets of our country are in turmoil. The universities are filled with students rebelling and rioting. Communists are seeking to destroy our country. Russia is threatening us with her might, and the Republic is in danger. Yes - danger from within and without. We need law and order! Without it our nation cannot survive." - Adolf Hitler, 1932

When a propagandist warns members of her audience that disaster will result if they do not follow a particular course of action, she is using the fear appeal. By playing on the audience's deep-seated fears, practitioners of this technique hope to redirect attention away from the merits of a particular proposal and toward steps that can be taken to reduce the fear.

This technique can be highly effective when wielded by a fascist demagogue, but it is typically used in less dramatic ways. Consider the following:

- A television commercial portrays a terrible automobile accident (the fear appeal), and reminds viewers to wear their seat-belts (the fear-reducing behavior).
- A pamphlet from an insurance company includes pictures of houses destroyed by floods (the fear appeal), and follows up with details about home-owners' insurance (the fear-reducing behavior).
- A letter from a pro-gun organization begins by describing a lawless America in which only criminals own guns (the fear appeal), and concludes by asking readers to oppose a ban on automatic weapons (the fear-reducing behavior).

Since the end of the second world war, social psychologists and communication scholars have been conducting empirical studies in order to learn more about the effectiveness of fear appeals. Some have criticized the conceptualization of the studies, and others have found fault with the experimental methods, but the general conclusions are worth considering, if not accepting.

- "All other things being equal, the more frightened a person is by a communication, the more likely her or she is to take positive preventive action."(Pratkanis and Aronson, 1991)
- Fear appeals will not succeed in altering behavior if the audience feels powerless to change the situation.
- Fear appeals are more likely to succeed in changing behavior if they contain specific recommendations for reducing the threat that the audience believes are both effective and doable.

In summary, there are four elements to a successful fear appeal: 1) a threat, 2) a specific recommendation about how the audience should behave, 3) audience perception that the recommendation will be effective in addressing the threat, and 4) audience perception that they are capable of performing the recommended behavior.

When fear appeals do not include all four elements, they are likely to fail. Pratkanis and Aronson provide the example of the anti-nuclear movement, which successfully aroused public fear of nuclear war, but offered few specific recommendations that people perceived as effective or doable. By contrast, fall-out shelters were enormously popular during the 1950s because people believed that shelters would protect them from nuclear war, and installing a shelter was something that they could do.

In a similar fashion, during the 1964 campaign, Lyndon Johnson was said to have swayed many voters with a well-known television commercial that portrayed a young girl being annihilated in a nuclear blast. This commercial linked nuclear war to Barry Goldwater (Johnson's opponent), and proposed a vote for Johnson as an effective, doable way of avoiding the threat.

In contemporary politics, the fear-appeal continues to be widespread. When a politician agitates the public's fear of immigration, or crime, and proposes that voting for her will reduce the threat, she is using this technique. When confronted with persuasive messages that capitalize on our fear, we should ask ourselves the following questions:

- Is the speaker exaggerating the fear or threat in order to obtain my support?
- How legitimate is the fear that the speaker is provoking?
- Will performing the recommended action actually reduce the supposed threat?
- When viewed dispassionately, what are the merits of the speaker's proposal?

Appeal to flattery

From Wikipedia, the free encyclopedia

This article **needs additional citations for verification**. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. *(September 2011)*

Appeal to flattery[1] (also **apple polishing** or **wheel greasing**) is a fallacy in which a person uses flattery, excessive compliments, in an attempt to win support for their side.

Flattery is often used to hide the true intent of an idea or proposal. Praise offers a momentary personal distraction that can often weaken judgment. Moreover, it is usually a cunning form of appeal to consequences, since the audience is subject to be flattered *as long as they comply* with the flatterer.

Example:

> "Surely a man as smart as you can see this is a brilliant proposal." (failing to accept the proposal is a tacit admission of stupidity)

Appeal to flattery is a specific kind of appeal to emotion.

[edit]Bibliography

- Plutarch. *How to know a flatterer from a friend*. Paris: Editions DUPLEIX. ISBN 9791092019001.

[edit]See also

- Flattery
- Superficial charm
- Sycophancy

[edit]References

1. ^ "Fallacy: Appeal to Flattery". *The Nizkor Project*. Retrieved 2010-12-10.

Description of Appeal to Flattery

An Appeal to Flattery is a fallacy of the following form:

1. Person A is flattered by person B.
2. Person B makes claim X.
3. Therefore X is true.

The basic idea behind this fallacy is that flattery is presented in the place of evidence for accepting a claim. this sort of "reasoning" is fallacious because flattery is not, in fact, evidence for a claim. This is especially clear in a case like this: "My Bill, that is a really nice tie. By the way, it is quite clear that one plus one is equal to forty three."

Examples of Appeal to Flattery

1. "Might I say that this is the best philosophy class I've ever taken. By the way, about those two points I need to get an A..."
2. "That was a wonderful joke about AIDS boss, and I agree with you that the damn liberals are wrecking the country. Now about my raise..."
3. "That was a singularly brilliant idea. I have never seen such a clear and eloquent defense of Plato's position. If you do not mind, I'll base my paper on it. Provided that you allow me a little extra time past the deadline to work on it."

Appeal to pity

From Wikipedia, the free encyclopedia

This article **needs additional citations for verification**. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. *(April 2011)*

An **appeal to pity** (also called ***argumentum ad misericordiam*** or **the Galileo argument**)[1][2] is a fallacy in which someone tries to win support for an argument or idea by exploiting his or her opponent's feelings of pity or guilt. It is a specific kind of appeal to emotion.

Contents

[hide]

1 Examples

2 Analysis

3 See also

4 Notes

[edit]Examples

- "You must have graded my exam incorrectly. I studied very hard for weeks specifically because I knew my career depended on getting a good grade. If you give me a failing grade I'm ruined!"
- "Ladies and gentlemen of the jury, look at this miserable man, in a wheelchair, unable to use his legs. Could such a man really be guilty of embezzlement?"

[edit]Analysis

Recognizing an argument as an appeal to pity does not necessarily invalidate the conclusion or the factual assertions. There may be other reasons to accept the invited conclusion, but an appeal to pity is not one of them (see also, argument from fallacy).

[edit]See also

- Appeal to consequences

[edit]Notes

1. ^ [1]
2. ^ "Appeal to Pity (the Galileo Argument)". Retrieved 6 October 2012

Appeal to Pity (the Galileo Argument)

This strategy is an attempt to persuade someone to agree with you or give you what you want by making them pity or feel sorry for you. This fallacy can make the other person seem cruel or insensitive if they do not comply. The connection to Galileo refers to his trials and house arrest by the Inquisition as a result of his scientific views that branded him as a heretic. Reference: http://www.don-lindsay-archive.org/skeptic/arguments.html#pity
Example: "Your honor, in this case we ask that you suspend the recommended ten years of incarceration and sentence my client to supervised probation and electronic house-arrest. My client recognizes the seriousness of his offense and is remorseful for his involvement in the selling of classified information to the Chinese. This incident has had tragic

personal and career consequences for him already. He has lost his job at NASA as well as his government security clearance, and he will be unlikely to ever work in the field of space research again.

The stress of the investigation and the trial has destroyed his marriage. And the financial pressures and the imposed fines have left him destitute. He will spend the rest of his natural life trying to pay those fines. To further punish him with incarceration will serve no purpose but to make creating a new life and making new start impossible. My client is not a threat to society. His crime was one of greed and not violence. We ask that you consider the consequences he has already suffered to be enough, and we ask the court for mercy."

NB: This example speaks for itself and is typical of appeal to pity proposals. While the individual may have suffered greatly, the real issue is whether the incarceration itself is the usual and customary penalty for the crimes he commited. The consequences of such court action is intended to be punitive, so excusing someone from the penalties so they don't have to suffer those consequences defeats the purpose of the trial.

Appeal To Pity (Appeal to Sympathy, The Galileo Argument):
"I did not murder my mother and father with an axe ! Please don't find me guilty; I'm suffering enough through being an orphan."

Some authors want you to know they're suffering for their beliefs. For example, "Scientists scoffed at Copernicus and Galileo; they laughed at

Edison, Tesla and Marconi; they won't give my ideas a fair hearing either. But time will be the judge. I can wait; I am patient; sooner or later science will be forced to admit that all matter is built, not of atoms, but of tiny capsules of TIME."

There is a strange variant which shows up on Usenet. Somebody refuses to answer questions about their claims, on the grounds that the asker is mean and has hurt their feelings. Or, that the question is personal.

Appeal to ridicule

From Wikipedia, the free encyclopedia

Appeal to ridicule (also called **appeal to mockery** or the **horse laugh**[1]), is an informal fallacy which presents an opponent's argument as absurd, ridiculous, or in any way humorous, to the specific end of a foregone conclusion that the argument lacks any substance which would merit consideration.

Appeal to ridicule is often found in the form of comparing a nuanced circumstance or argument to a laughably commonplace occurrence or to some other irrelevancy on the basis of comedic timing, wordplay, or making an opponent and their argument the object of a joke. For example, following criticism during the 2008 United States general elections that Barack Obama's policies were "socialist", Obama responded by saying "Next they'll be calling me a communist because I shared my toys in kindergarten.", pushing the "socialist" label to its extreme and presenting a flippant response to the argument, rejecting it as unworthy of serious consideration.[2]

This is a rhetorical tactic that mocks an opponent's argument or standpoint, attempting to inspire an emotional reaction (making it a type of appeal to emotion) in the audience and to highlight anycounter-intuitive aspects of that argument, making it appear foolish and contrary to common sense. This is typically done by making a mockery of the argument's foundation that represents it in an uncharitable and overly simplified way.

[edit]References

1. ^ Moore and Parker, *Critical Thinking*
2. ^ Bowell, Tracy (2009). *Critical Thinking: A Concise Guide.* Taylor & Francis. pp. 45. ISBN 9780415471831.

Appeal to spite

From Wikipedia, the free encyclopedia

This article **needs additional citations for verification**. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. *(May 2008)*

An **appeal to spite** (also called **argumentum ad odium**)[1] is a fallacy in which someone attempts to win favor for an argument by exploiting existing feelings of bitterness, spite, orschadenfreude in the opposing party.[2] It is an attempt to sway the audience emotionally by associating a hate-figure with opposition to the speaker's argument.

Fallacious ad hominem arguments which attack villains holding the opposing view are often confused with appeals to spite. The ad hominem can be a similar appeal to a negative emotion, but differs from it in *directly criticizing* the villain —that is unnecessary in an appeal to spite, where hatred for the villain is assumed.

[edit]Examples

- *"If you vote for this tax cut, it will mean that the fat cats will get even more money to spend on their expensive luxury yachts, while you and I keep struggling to pay the bills."*
- *"Stop recycling! Aren't you tired of Hollywood celebrities preaching to everyone about saving the Earth?"*
- *Why should student benefits be reinstated, when I got nothing from the state and had to sacrifice to pay for my studies?*

[edit]References

1. ^ Curtis, G. N.. "Emotional Appeal". "Appeal to Hatred (AKA, *Argumentum ad Odium)*"
2. ^ Ravi, K. R. (July 2006). "Thinking about fallacies and invalid arguments". *Thinking About Thinking.* p. 59. ISBN 978-81-7992-516-4. "You know how these top people are. They make fantastic sums of money, but the minute something goes wrong they make a scapegoat out of poor people like us." - The speaker tries to appeal to hatred, spite and other negative emotions in the listener.

Wishful thinking

From Wikipedia, the free encyclopedia

For other uses, see Wishful thinking (disambiguation).

Wishful thinking is the formation of beliefs and making decisions according to what might be pleasing to imagine instead of by appealing to evidence, rationality, or reality. Studies have consistently shown that holding all else equal, subjects will predict positive outcomes to be more likely than negative outcomes (see valence effect).

On the other hand, some psychologists believe that positive thinking is able to positively influence behavior and so bring about better results. They call it "Pygmalion Effect".[*citation needed*]

Christopher Booker described wishful thinking in terms of

> “the fantasy cycle” ... a pattern that recurs in personal lives, in politics, in history – and in storytelling. When we embark on a course of action which is unconsciously driven by wishful thinking, all may seem to go well for a time, in what may be called the “dream stage”. But because this make-believe can never be reconciled with reality, it leads to a “frustration stage” as things start to go wrong, prompting a more determined effort to keep the fantasy in being. As reality presses in, it leads to a “nightmare stage” as everything goes wrong, culminating in an “explosion into reality”, when the fantasy finally falls apart.[1]

Contents

[hide]

1 Notable examples

2 As a fallacy

3 Methods to eliminate wishful thinking

4 Reverse wishful thinking

5 See also

6 References

7 Further reading

8 External links

[edit]Notable examples

Prominent examples of wishful thinking include:

- Economist Irving Fisher said that "stock prices have reached what looks like a permanently high plateau" a few weeks before the Stock Market Crash of 1929, which was followed by the Great Depression.
- The Kennedy administration maintained that, if overpowered by Cuban forces, the CIA-backed rebels could "escape destruction by melting into the countryside" in the Bay of Pigs Invasion.[2]

[edit]As a fallacy

In addition to being a cognitive bias and a poor way of making decisions, wishful thinking is commonly held to be a specific informal fallacy in an argument when it is assumed that because we wish something to be true or false, it *is* actually true or false. This fallacy has the form "I wish that P is true/false, therefore P is true/false."[3] Wishful thinking, if this were true, would rely uponappeals to emotion, and would also be a red herring.[*citation needed*]

Wishful thinking may cause blindness to unintended consequences.[*citation needed*]

[edit]Methods to eliminate wishful thinking

Reference class forecasting was developed by Oxford professor Bent Flyvbjerg to eliminate or reduce the effects of wishful thinking in decision making.[4] Daniel Kahneman, Nobel Prize winner in economics, calls Flyvbjerg's counsel to use reference class forecasting to de-bias forecasts and avoid wishful thinking, "the single most important piece of advice regarding how to increase accuracy in forecasting."[5]

[edit]Reverse wishful thinking

Reverse wishful thinking is where someone assumes that because something is bad it is likely to happen. This may be to fulfill a prediction made by the speaker or because they are generallypessimistic.[citation needed]

[edit]See also

Ψ *Psychology portal*

- Appeal to consequences
- Cherry picking
- Choice-supportive bias
- Confirmation bias
- Emotional memory
- Groupthink
- Magical thinking
- Nirvana fallacy
- Optimism bias
- Self-deception
- Self-fulfilling prophecy
- Self-serving bias
- Truthiness
- Valence effect

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3. ^ The Fallacy Files: Wishful Thinking
4. ^ Flyvbjerg, B., 2008, "Curbing Optimism Bias and Strategic Misrepresentation in Planning: Reference Class Forecasting in Practice." European Planning Studies, vol. 16, no. 1, January, pp. 3-21.
5. ^ Daniel Kahneman, 2011, Thinking, Fast and Slow (New York: Farrar, Straus and Giroux), p. 251

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- Sutherland, Stuart (1994) *Irrationality: The Enemy Within* Penguin. ISBN 0-14-016726-9 Chapter 9, "Drive and Emotion"

[edit]External links

- Articles Thedict.net, About wishful thinking

Appeal to motive

From Wikipedia, the free encyclopedia

Appeal to motive is a pattern of argument which consists in challenging a thesis by calling into question the motives of its proposer. It can be considered as a special case of the ad hominem circumstantial argument. As such, this type of argument may be an informal fallacy.

A common feature of appeals to motive is that only the possibility of a motive (however small) is shown, without showing the motive actually existed or, if the motive did exist, that the motive played a role in forming the argument and its conclusion. Indeed, it is often assumed that the mere possibility of motive is evidence enough.

[edit]Examples

- "That website recommended ACME's widget over Megacorp's widget. But the website also displays ACME advertising on their site, so they were probably biased in their review." The thesis in this case is the website's evaluation of the relative merits of the two products.
- "The referee comes from the same place as (*a sports team*), so his refereeing was obviously biased towards them." In this case, the thesis consists of the referee's rulings.
- "My opponent argues on and on in favor of allowing that mall to be built in the center of town. What he won't tell you is that his daughter and her friends plan to shop there once it's open."

[edit]See also

- Ad hominem#Circumstantial
- Bulverism
- Conflict of interest

[edit]References

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Appeal to novelty

From Wikipedia, the free encyclopedia

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The **appeal to novelty** (also called ***argumentum ad novitatem***) is a fallacy in which someone prematurely claims that an idea or proposal is correct or superior, *exclusively* because it is new and modern. In a controversy between status quo and new inventions, an appeal to novelty argument isn't in itself a valid argument. The fallacy may take two forms: overestimating the new and modern, prematurely and without investigation assuming it to be best-case, or underestimating status quo, prematurely and without investigation assuming it to be worst-case.

Investigation may prove these claims to be true, but it is a fallacy to prematurely conclude this *only from the general claim that all novelty is good.*

The opposite of an appeal to novelty is an appeal to tradition, in which one argues that the "old ways" are always superior to new ideas.

Appeals to novelty are often successful in a modern world where everyone is eager to be on the "cutting edge" of technology. The so-called "Dot-com bust" of the early 2000s could easily be interpreted as a sign of the dangers of naïvely embracing new ideas without first viewing them with a critical eye. Also, advertisers frequently extoll the newness of their products as a reason to buy. Conversely, this is satirised as bleeding edge technology by skeptics (this may itself be an example of the appeal to tradition fallacy).

The appeal to novelty is based on the reasoning that in general people will tend to try to improve the outputs resulting from their efforts. Thus, for example, a company producing a product might be assumed to know about existing flaws and to be seeking to correct them in a future revision. This line of reasoning is obviously flawed for many reasons, most notably that: it ignores motive (a new product may be released that is functionally identical to previous products but which is cheaper to produce); it ignores cyclicality (the fashion industry continually rediscovers old styles and markets them as the next new thing); and it ignores population dynamics (the previous product may have been created by an expert who has since been replaced by a neophyte).

[edit]Examples

- "If you want to lose weight, your best bet is to follow the latest diet."
- "The department will become more profitable because it has been reorganized."

- "Upgrading all your software to the most recent versions will make your system more reliable."
- "Things are bad with party A in charge, thus party B will bring an improvement if they're elected."

[edit]Appeal to novelty fallacy: Designation pitfalls

In some cases, there may exist one or more unnamed - but still universally acknowledged - correlations between novelty and positive traits. For example, newer technology has a tendency to be more complex and advanced than older. A correlation may for example exist between newness of a virus definition file and the security of a computer, or between the newness of a computer and its speed and performance. In these precise cases, something is more probable to be superior *whenever* it is new and modern, though not *exclusively because they are* new and modern. Thus, what may seem like Appeal to novelty isn't a fallacy in every case. It is only a fallacy if this correlation is disputed or if no such correlation has been examined.

In aesthetics, for example in some arts and musics, novelty - though not all forms of novelty - is used as a criterion for acclaim. This may look like the fallacy, but in some circles there may be an unnamed consensus that people eventually grow tired of what they're used to. In these cases, the aforementioned criterion and justification isn't based *exclusively* on Appeal to novelty, and thus is no fallacy.

Argumentum ad lazarum

From Wikipedia, the free encyclopedia

(Redirected from Appeal to poverty)

Argumentum ad lazarum or **appeal to poverty** is the informal fallacy of thinking a conclusion is correct because the speaker is poor, or it's incorrect because the speaker is rich. It is named after Lazarus, a beggar in a New Testament parable who receives his reward in the afterlife.

This is popularly exploited as the statement, "Poor, but honest."

[edit]Examples

Family farms are struggling to get by so when they say we need to protect them, they must be on to something.

The homeless tell us it’s hard to find housing. Thus it must be.

The monks have forsworn all material possessions. They must have achieved enlightenment.

All you need to know about the civil war in that country is that the rebels live in mud huts, while the general who sends troops against them sits in a luxurious, air-conditioned office.

The opposite is the *argumentum ad crumenam*.

[edit]References

- Georgia State University
- Philosophical Society - logical fallacies

Appeal to tradition

From Wikipedia, the free encyclopedia

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Contents

[hide]

1 See also

2 Notes

3 References

Appeal to tradition (also known as ***argumentum ad antiquitatem***, **appeal to antiquity**, or **appeal to common practice**) is a common fallacy in which a thesis is deemed correct on the basis that it correlates with some past or present tradition. The appeal takes the form of "this is right because we've always done it this way."[1]

An appeal to tradition essentially makes two assumptions that are not *necessarily* true:

- The old way of thinking was proven correct when introduced, i.e. since the old way of thinking was prevalent, it was necessarily correct.
  - In actuality this may be false—the tradition might be entirely based on incorrect grounds.
- The past justifications for the tradition are still valid at present.
  - In actuality, the circumstances may have changed; this assumption may also therefore be untrue.

The opposite of an appeal to tradition is an appeal to novelty, claiming something is good because it is *new*.

[edit]See also

- List of logical fallacies
- Social inertia

- Tradition
- Common sense
- Inductive reasoning
- Cargo cult

[edit]Notes

1. ^ Trufant 1917.

[edit]References

- *Trufant, William (1917). Argumentation and Debating. Houghton Mifflin company. Digitized May 9, 2007.*

Appeal to nature

From Wikipedia, the free encyclopedia

An example of an "appeal to nature" argument: Since animals are killed for food in nature, it is justifiable for humans to kill and eat animals.

An **appeal to nature** is a fallacious argument or rhetorical tactic in which a phenomenon is described as desirable merely because it is natural, or undesirable merely because it is unnatural.[*citation needed*]

It is part of the naturalistic fallacy: whereas the naturalistic fallacy in general refers to attempts to derive a statement of value from a statement of fact, the appeal to nature refers specifically to where the statement of fact is the alleged occurrence of the phenomenon in nature and the statement of value is the alleged desirability thereof. It depends on a positive view of nature, e.g. good, desirable, etc. as a foundation of the reasoning of the argument.

Contents

[hide]

1 Forms

2 History

3 Examples

4 See also

5 References

6 External links

[edit]Forms

General form of this type of argument:[1]

N is natural.

Therefore, N is good or right.

U is unnatural.

Therefore, U is bad or wrong.

An appeal to nature is considered to have committed a logical fallacy in stating that something is good or right because it is natural, or that something is bad or wrong because it is unnatural orartificial. This is a fallacy of relevance in that the natural origins of a phenomenon are not established as being relevant to their desirability. In this type of informal fallacy,[2] nature implies an ideal or desired state of being,[3] a state of how things were, or how they should be: in this sense an appeal to nature may resemble an appeal to tradition.

Skeptic Julian Baggini explains that "[E]ven if we can agree that some things are natural and some are not, what follows from this? The answer is: nothing. There is no factual reason to suppose that what is natural is good (or at least better) and what is unnatural is bad (or at least worse)."[4]

In some contexts, the use of the terms of "nature" and "natural" can be vague, leading to unintended associations with other concepts. The word "natural" can also be a loaded term — much like the word "normal", in some contexts, it can carry an implicit value judgement. An appeal to nature would thus beg the question, because the conclusion is entailed by the premise.[1]

Opinions differ regarding appeal to nature in rational argument. Sometimes, it can be taken as a rule of thumb that admits some exceptions, but nonetheless proves to be of use in one or more specific topics, (or in general). As a rule of thumb, natural or unnatural facts provide presumptively reliable good or bad values, *barring evidence to the contrary.* Failure to consider such evidence commits a fallacy of accident under this view.[1][5]

[edit]History

The meaning and importance of various understandings and concepts of "nature" has been a persistent topic of discussion historically in both science and philosophy. In Ancient Greece, “the laws of nature were regarded not [simply] as generalized descriptions of what actually happens in the natural world… but rather as norms that people ought to follow… Thus the appeal to nature tended to mean an appeal to the *nature of man* treated as a source for norms of conduct. To Greeks this… represented a conscious probing and exploration into an area wherein, according to their whole tradition of thought, lay the true source for norms of conduct.”[6]

St. Thomas Aquinas held that the "good" was a process of actualization where the formal principle of a natural object fulfilled its final cause (purpose) such that a tree's purpose is to develop another tree or a bouncy ball's is to bounce. The formal principle to Aquinas was defined through Aristotle as "that which makes a thing what it is." Thus the source of potency to accomplish all natural object ends is through the formal cause of an object. For which Aquinas suggests a non-dualistic model for substance: Form and Matter. Aquinas held that what is good is what is natural in that God created all things and they were good. However, he argued from human reason rather than faith when he discussed the ontological significance.[*citation needed*] He suggested that the end (fulfillment of its purpose) is the good and there are various degrees of Good, such as the processes of development in a living being. Arguably, happiness is the ultimate end for all human beings and thus all morality is in reference to what actualizes this "happiness." But Aquinas argued that there was an objective principle, not relative, which accomplished self-actualization. A simple example is that drugs simulate happiness but are only "apparent/false" happiness while integrity, reason, and love all flow with nature and therefore permit actualization of the ultimate end: happiness.[*citation needed*]

In modern times, philosophers have challenged the notion that human beings' status as natural beings should determine or dictate their normative being. For example, Rousseau famously suggested that "We do not know what our nature permits us to be."[7] More recently, Nikolas Kompridis has applied Rousseau's axiom to debates about genetic intervention (or other kinds of intervention) into the biological basis of human life, writing:

[T]here is a domain of human freedom not dictated by our biological nature, but [this] is somewhat unnerving because it leaves uncomfortably open what kind of beings human beings could become… Put another way: What are we prepared to permit our nature to be? And on what basis should we give our permission?

Kompridis writes that the naturalistic view of living things, articulated by one scientist as that of "machines whose components are biochemicals"[8] (Rodney Brooks), threatens to make a single normative understanding of human being the only possible understanding. He writes, "When we regard ourselves as 'machines whose components are biochemicals,' we not only presume to know what our nature permits us to be, but also that this knowledge permits us to answer the question of what is to become of us… This is not a question we were meant to answer, but, rather, a question to which we must remain answerable."[9]

Philosophers such as Jacques Derrida, Bruno Latour and others have also questioned inherited understandings of nature in their work.

[edit]Examples

Some popular examples of the appeal to nature can be found on labels and advertisements for food, clothing, and alternative herbal remedies.[4] Labels may use the phrase "all-natural", to imply that products are environmentally friendly and/or safe. However, many toxic substances are found in nature, including in common plant sources and herbs such as hemlock, nightshade,belladonna, and poisonous mushrooms, and these may have serious side effects.

It has therefore been suggested that whether or not a product is "natural" is irrelevant, in itself, in determining its safety or effectiveness.[4][10]

[edit]See also

- Chemophobia
- Environmentalism
- Ethical naturalism
- Greenwashing
- Green brands
- Green marketing
- Human nature
- Naturalistic fallacy – a fallacy often assumed to mean the same thing.
- Natural kind
- Natural justice
- Natural law
- Natural selection
- Norm (philosophy)
- Technophobia

References

1. ^ [a] [b] [c] Curtis, Gary N. (15 November 2010). "Fallacy Files — Appeal to Nature". fallacyfiles.org. Retrieved 13 February 2011.
2. ^ Groarke, Leo (2008). "Informal Logic". In Zalta, Edward N.. *Stanford Encyclopedia of Philosophy* (Fall 2008 ed.). "[... 3. Fallacy Theory ...] Early work in informal logic does not favour a systematic attempt to assess the strength and properties of good deductive, inductive, conductive, etc. arguments. Instead, it favours fallacies as a tool in the analysis of informal reasoning. According to traditional accounts, a fallacy is a pattern of poor reasoning which appears to be (and in this sense mimics) a pattern of good reasoning (see Hansen [2002]). Such accounts are problematic, especially because it is difficult to identify when poor reasoning "appears" to be good. What "appears good" to one person may not appear so to another. In assessing ordinary arguments, most contemporary commentators avoid such issues by understanding fallacies more simply, as common patterns of poor reasoning which can usefully be identified in the evaluation of informal reasoning."
3. ^ *Woman's rights and duties considered with relation to their influence on society and on her own condition, by a woman*. **Vol. I**. London: John W. Parker. 1840. p. 6.
4. ^ [a] [b] [c] Baggini, Julian (2004). *Making sense: philosophy behind the headlines*. Oxford University Press. pp. 181–182. ISBN 978-0-19-280506-5.
5. ^ Groarke, Leo (2008). "Informal Logic". In Zalta, Edward N.. *Stanford Encyclopedia of Philosophy* (Fall 2008 ed.). "Informal logic is sometimes presented as a theoretical alternative to formal logic. This kind of characterization may reflect early battles in philosophy departments which debated, sometimes with acrimony, whether informal logic should be considered "real" logic. Today, informal logic enjoys a more conciliatory relationship with formal logic. Its attempt to understand informal reasoning is usually (but not always) couched in natural language, but research in informal logic sometimes employs formal methods and it remains an open question whether the accounts of argument in which informal logic specializes can in principle be formalized."
6. ^ Saunders, Jason Lewis (26 October 2008). "Western Philosophical Schools and Doctrines: Ancient and Medieval Schools: Sophists: Particular Doctrines: Theoretical issues.". *Encyclopaedia Britannica*. Retrieved 07 February 2011.
7. ^ Jean-Jacques Rousseau, *Emile: or, On education*, USA: Basic Books, 1979, 62
8. ^ “The current scientific view of living things is that they are machines whose components are biochemicals.” Rodney Brooks, "The relationship between matter and life", *Nature* 409 (2010), 410.
9. ^ Nikolas Kompridis, "Technology's Challenge to Democracy: What of the Human?", *Parrhesia* Number 8 (2009), 23–31.
10. ^ Flew, Antony (1998). *How to Think Straight: An Introduction to Critical Reasoning*. Prometheus Books. ISBN 978-1-57392-239-5.

[edit]External links

- Nature, Human Nature, and Biotechnology
- Appeal to Nature
- Dietary Supplements: How To Know What Is Safe American Cancer Society: §The "Natural Is Safe" or "Natural Is Better" Myth (Archived from the original 18 April 2008)

Argumentum ad crumenam

From Wikipedia, the free encyclopedia

(Redirected from Appeal to wealth)

An ***argumentum ad crumenam*** argument, also known as **an argument to the purse**, is the informal fallacy of concluding that a statement is correct because the speaker is rich (or that a statement is incorrect because the speaker is poor).

The opposite is the *argumentum ad lazarum*.

[edit]Usage

> *If you're so smart, why aren't you rich?*
>
> *This new law is a good idea. Most of the people against it are riff-raff who make less than $20,000 a year.*
>
> *Warren Buffett is hosting a seminar. This seminar is better than others, because Warren Buffett is richer than most people.*

> From Tristram Shandy [1]: "Then, added my father, making use of the argument *Ad Crumenam*, 'I will lay twenty guineas to a single crown-piece, (which will serve to give away to *Obadiah* when he gets back) that this same *Stevinus* was some engineer or other, or has wrote something or other, either directly or indirectly, upon the science of fortification.'"

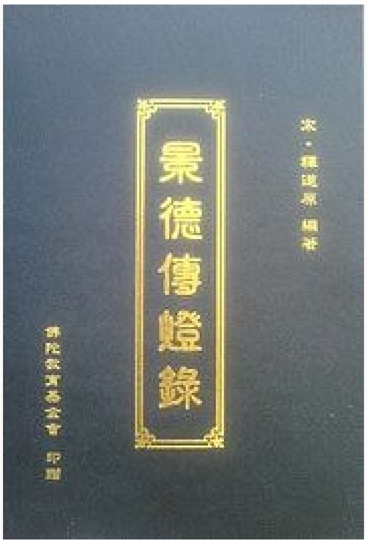
[edit]References

1. ^ Laurence Sterne. The Life and Opinions of Tristram Shandy, Gentleman. Everyman's library: New York, 1991.

- Georgia State University
- Philosophical Society - logical fallacies

Argument from silence

From Wikipedia, the free encyclopedia



The *Transmission of the Lamp*compilation of Buddhist monk biographies is surprisingly silent on the "rules of purity" codes of 1103, yet the document of the 1103 codes exists.[1]

An **argument from silence** (also called ***argumentum a silentio*** in Latin) is generally a conclusion drawn based on the absence of evidence, rather than the existence of evidence.[2] In the field of classical studies, it often refers to the deduction from the lack of references to a subject in the available writings of an author to the conclusion that he was ignorant of it.[3]

Thus in historical analysis with an argument from silence, the absence of a reference to an event or a document is used to cast doubt on the event not mentioned.[4] While most historical approaches rely on what an author's works contain, an argument from silence relies on what the book or document does not contain.[4] This approach thus uses what an author "should have said" rather what is available in the author's extant writings.[5][4]

Some scholars such as Errietta Bissa flatly state that arguments from silence are not valid.[6] Other scholars such as David Henige state that, although risky, such arguments can at times shed light on historical events.[5] Yifa has pointed out the perils of arguments from silence, in that although no references appear to the "Rules of purity" codes of monastic conduct of 1103 in the Transmission of the Lamp, or any of the Pure Land documents, a copy of the code in which the author identifies himself exists.[1]

Contents

[hide]

1 Historical analysis

2 Legal aspects

3 See also

4 References

[edit]Historical analysis

An argument from silence can be convincing when mentioning a fact can be seen as so natural that its omission is a good reason to assume ignorance. For example, while the editors of Yerushalmi and Bavli mention the other community, most scholars believe these documents were written independently. Louis Jacobs writes, "If the editors of either had had access to an actual text of the other, it is inconceivable that they would not have mentioned this. Here the argument from silence is very convincing."[7]

Yifa points out that arguments from silence are often less than conclusive, e.g. the lack of references to a compilation of a set of monastic codes by contemporaries or even by disciples does not mean that it never existed.[1] This is well as illustrated by the case of Changlu Zongze's "Rules of purity" which he wrote for the Chan monastery in 1103. One of his contemporaries wrote a preface to a collection of his writings neglected to mention his code. And none of his biographies nor the documents of the Transmission of the Lamp, nor the Pure Land documents (which exalt him) refer to Zongze's collection of a monastic code.[1] However a copy of the code in which the author identifies himself exists.[1]

Frances Wood based her controversial book Did Marco Polo go to China? on arguments from silence.[5] Woods argued that Marco Polo never went to China and fabricated his accounts because he failed to mention elements from the visual landscape such as tea, did not record the Great Wall and neglected to record practices such as foot-binding. She argued that no outsider could spend 15 years in China and not observe and record these elements. Most historians disagree with Wood's reasoning.[5]

[edit]Legal aspects

In the context of Morocco's Truth Commission of 1999 regarding torture and secret detentions, Wu and Livescu state that the fact that someone remained silent is no proof of their ignorance about a specific piece of information. They point out that the absence of records about the torture of prisoners under the secret detention program is no proof that such detentions did not involve torture, or that some detentions did not take place.[8]

[edit]See also

Philosophy portal

- Argument from ignorance
- Evidence of absence
- Negative proof
- Russell's teapot

[edit]References

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2. ^ "argumentum e silentio *noun phrase*" *The Oxford Essential Dictionary of Foreign Terms in English*. Ed. Jennifer Speake. Berkley Books, 1999.
3. ^ "silence, the argument from". *The Concise Oxford Dictionary of the Christian Church*. Ed. E. A. Livingstone. Oxford University Press, 2006.
4. ^ a b c *Seven Pillories of Wisdom* by David R. Hall 1991 ISBN 0-86554-369-0 pages 55-56.
5. ^ a b c d *Historical evidence and argument* by David P. Henige 2005 ISBN 978-0-299-21410-4 page 176.
6. ^ *Governmental intervention in foreign trade in archaïc and classical Greece* by Errietta M. A. Bissa ISBN 90-04-17504-0page 21.
7. ^ "Talmud". *A Concise Companion to the Jewish Religion*. Louis Jacobs. Oxford University Press, 1999.
8. ^ *Human Rights, Suffering, and Aesthetics in Political Prison Literature* by Yenna Wu, Simona Livescu 2011 ISBN 0-7391-6741-3 pages 86-90.

Chronological snobbery

From Wikipedia, the free encyclopedia

Chronological snobbery, a term coined by friends C. S. Lewis and Owen Barfield, is a logical argument (and usually when thus termed, considered an outright fallacy) describing the erroneous argument that the thinking, art, or science of an earlier time is *inherently* inferior when compared to that of the present. As Barfield explains it, it is the belief that "intellectually, humanity languished for countless generations in the most childish errors on all sorts of crucial subjects, until it was redeemed by some simple scientific dictum of the last century."[1] The subject came up between them when Barfield had converted to Anthroposophy and was persuading Lewis (an atheist at that time) to join him. One of Lewis's objections was that religion was simply outdated, and in *Surprised by Joy* (chapter 13, p. 207-208) he describes how this was fallacious:

> Barfield never made me an Anthroposophist, but his counterattacks destroyed forever two elements in my own thought. In the first place he made short work of what I have called my "chronological snobbery," the uncritical acceptance of the intellectual climate common to our own age and the assumption that whatever has gone out of date is on that account discredited. You must find why it went out of date. Was it ever refuted (and if so by whom, where, and how conclusively) or did it merely die away as fashions do? If the latter, this tells us nothing about its truth or falsehood. From seeing this, one passes to the realization that our own age is also "a period," and certainly has, like all periods, its own characteristic illusions. They are likeliest to lurk in those widespread assumptions which are so ingrained in the age that no one dares to attack or feels it necessary to defend them.

[edit]Pattern

The form of the chronological snobbery fallacy can be expressed as follows:

1. It is argued that A.
2. A is an old argument, dating back to the times when people also believed B.
3. B is clearly false.
4. Therefore, A is false.

[edit]Examples

C. S. Lewis in *Surprised by Joy* (Chapter 13, p. 206) recounts his story:

> First Harwood (still without changing his expression), and then Barfield, embraced the doctrines of Steiner and became anthroposophists. I was hideously shocked. Everything I had labored so hard to expel from my own life seemed to have flared up and met me in my best friends. Not only my best friends but those whom I would have thought safest; the one so immovable, the other brought up in a free-thinking family and so immune from all "superstition" that he had hardly heard of Christianity itself until he went to school. (The gospel first broke on Barfield in the form of a dictated list of Parables Peculiar to St. Matthew.) Not only in my seeming-safest friends but at a moment when we all had most need to stand together. And as I came to learn (so far as I ever have learned) what Steiner thought, my horror turned into disgust and resentment. For here, apparently, were all the abominations; none more abominable than those which had once attracted me. Here were gods, spirits, afterlife and pre-existence, initiates, occult knowledge, meditation. "Why–damn it–it's *medieval*," I exclaimed; for I still had all the chronological snobbery of my period and used the names of the earlier periods as terms of abuse.

The usage in general of the word "medieval" to mean "backwards" is also an example -- as is the use of the term "backwards" to mean "unsophisticated."

G. B. Tennyson in his book *Owen Barfield: Man and Meaning* offers the following firsthand account:

> I was attending a lecture with a varied but exclusively university-oriented audience of some five hundred when the lecturer, a Ph.D. in physics, said, almost in passing, "Remember that only three hundred years ago men actually believed the world was flat!" Considerable knowing laughter greeted this astonishing misrepresentation (or, should I say, falsehood?), and the assembled all murmured a kind of self-congratulatory hum of satisfaction with their own superior knowledge. At another point the lecturer dropped a reference to the onetime belief that the sun revolved around the earth. More laughter. The physicist, it was apparent, was merely offering burnt incense at the altar of some of our twentieth-century

idols.

[edit]See also

- Historian's fallacy
- Presentism (literary and historical analysis)
- Whig history
- Genetic fallacy

[edit]References

1. ^ *History in English Words* p. 164

[edit]External links

- Chronological Snobbery at Encyclopedia Barfieldiana
- C. S. Lewis on Chronological Snobbery
- Chronological Snobbery at Summa Bergania

Genetic fallacy

From Wikipedia, the free encyclopedia

The **genetic fallacy**, also known as **fallacy of origins**, **fallacy of virtue**,[1] is a fallacy of irrelevance where a conclusion is suggested based solely on something or someone's origin rather than its current meaning or context. This overlooks any difference to be found in the present situation, typically transferring the positive or negative esteem from the earlier context.

The fallacy therefore fails to assess the claim on its merit. The first criterion of a good argument is that the premises must have bearing on the truth or falsity of the claim in question.[2] Genetic accounts of an issue may be true, and they may help illuminate the reasons why the issue has assumed its present form, but they are irrelevant to its merits.[3]

According to the *Oxford Companion to Philosophy* (1995), the term originated in Morris Raphael Cohen and Ernest Nagel's book *Logic and Scientific Method*[4] (1934).

Contents

[hide]

1 Argument from age ("Wisdom of the Ancients")

2 "Not invented here"

3 Examples

4 See also

5 Notes

6 External links

[edit]Argument from age ("Wisdom of the Ancients")

This is a common version of the genetic fallacy where the thing in question is very new or old, so it must be better. Examples include products advertized as "New!" or "Old Fashioned Hamburgers".[1]

[edit]"Not invented here"

Another variation is to dismiss outside ideas because they did not originate from here. "This is the way we've always done it." The converse of this is also false. Just because something is foreign made, does not necessarily mean it's better.[1]

[edit]Examples

From *Attacking Faulty Reasoning* by T. Edward Damer, Third Edition p. 36:

> "You're not going to wear a wedding ring, are you? Don't you know that the wedding ring originally symbolized ankle chains worn by women to prevent them from running away from their husbands? I would not have thought you would be a party to such a sexist practice." There may be reasons why people may not wish to wear wedding rings, but it would be logically inappropriate for a couple to reject the notion of exchanging wedding rings on the sole grounds of its sexist origins.

From *With Good Reason: An Introduction to Informal Fallacies* by S. Morris Engel, Fifth Edition, pg. 196:

> America will never settle down; look at the rabble-rousers who founded it.

A commonly occurring example of this style of reasoning can be called the "etymological fallacy". This presents arguments based on the supposed real meaning of certain words, where that "real" meaning is in fact what the word meant centuries ago, or what its root word (in Latin, Greek etc.) meant. A popular tactic, it is easily shown to be fallacious and misleading. Thus:

> "Has he arrived yet?" "No, he came by car, not by boat!"

This is not merely a non-sequitur. It reflects that fact that the first speaker simply accepts the contemporary meaning of "arrive", whereas the second recalls the Latin origin: *ripa* meaning "shore" (compare also the words "river" and "Riviera"), whereby the English word "arrive" contains within it the idea of disembarkation.

[edit]See also

- Slippery slope

[edit]Notes

1. ^ a b c "A List Of Fallacious Arguments". Retrieved 6 October 2012.
2. ^ *Attacking Faulty Reasoning: A Practical Guide to Fallacy-Free Arguments* (Third Edition) by T. Edward Damer, chapter II, subsection "The Relevance Criterion" (pg. 12)

3. ^ *With Good Reason: An Introduction to Informal Fallacies* (Fifth Edition) by S. Morris Engel, chapter V, subsection 1 (pg. 198)

4. ^ Honderich, Ted, ed. (1995). "Genetic fallacy". *The Oxford Companion to Philosophy*. Oxford University Press. ISBN 978-0-19-866132-0.

[edit]External links

- Nizkor: Genetic fallacy
- Forms of the genetic fallacy
- Fallacy files: Genetic fallacy

Judgmental language

From Wikipedia, the free encyclopedia

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Judgmental language is a subset of red herring fallacies. It employs insultive, compromising or pejorative language to influence the recipient's judgment.

[edit]Examples

> *The Surgeon general says that smoking is harmful to your health. Nowhere in the Bible is it said that you shouldn't smoke. So who are you gonna listen to, some quack or the Lord God Almighty?*

This argument combines judgmental language also with Non sequitur and appeal to authority.

> *Conscription is the only working way to have a reliable and efficient army. We are far safer when we are defended by our very own sons than by some mercenaries, who will just fight for pay.*

Here the judgmental words are "our very own sons" (suppose you are childless or have only daughters?) and "mercenaries", which imply not only professional soldiers but rather soldiers of fortune. This argument is also a false dilemma: nothing implies that coercion and fear of punishment produces better soldiers than voluntarity, and that a professional army could not be assembled from the nation's own citizens.

[edit]See also

- Logic
- Weasel words

Naturalistic fallacy

From Wikipedia, the free encyclopedia

This article includes a list of references, but **its sources remain unclear because it has insufficient inline citations**. Please help toimprove this article by introducing more precise citations. *(March 2011)*

In philosophical ethics, the **naturalistic fallacy** was introduced by British philosopher G. E. Moore in his 1903 book *Principia Ethica*. Moore argues it would be fallacious to explain that which is*good* reductively, in terms of natural properties such as "pleasant" or "desirable".

The naturalistic fallacy is close to but not identical with the fallacious appeal to nature, the claim that what is natural is inherently good or right, and that what is unnatural is inherently bad or wrong. The fallacious appeal to nature would be the reverse of a moralistic fallacy: that what is good or right is thus natural.

Furthermore, Moore's naturalistic fallacy is very close to (and even confused with) the is–ought problem, which comes from Hume's *Treatise*. However, unlike Hume's view of the is–ought problem, Moore (and other proponents of ethical non-naturalism) did not consider the naturalistic fallacy to be at odds with moral realism.

Contents

[hide]

1 Different common uses
  - ○ 1.1 The is–ought problem
  - ○ 1.2 Moore's discussion
  - ○ 1.3 Appeal to nature

2 Criticism

3 See also

4 Further reading

5 Notes

6 References

7 External links

[edit]Different common uses

[edit]The is–ought problem

Main article: Is–ought problem

The term "naturalistic fallacy" is sometimes used to describe the deduction of an "ought" from an "is" (the Is–ought problem).

In using his categorical imperative Kant deduced that experience was necessary for their applications. But experience on its own or the imperative on its own could not possibly identify an act as being moral or immoral. We can have no certain knowledge of morality from them, being incapable of deducing how things ought to be from the fact that they happen to be arranged in a particular manner in experience.

Bentham, in discussing the relations of law and morality, found that when people discuss problems and issues they talk about how they wish it would be as opposed to how it actually is. This can be seen in discussions of natural law and positive law. Bentham criticized natural law theory because in his view it was a naturalistic fallacy, claiming that it described how things ought to be instead of how things are.

[edit]Moore's discussion

PRINCIPIA ETHICA

GEORGE EDWARD MOORE

"Everything is what it is,
and not another thing"

CAMBRIDGE
AT THE UNIVERSITY PRESS
1903

The title page of *Principia Ethica*

According to G. E. Moore's *Principia Ethica*, when philosophers try to define "good" reductively in terms of natural properties like "pleasant" or "desirable", they are committing the naturalistic fallacy.

> ...the assumption that because some quality or combination of qualities invariably and necessarily accompanies the quality of goodness, or is invariably and necessarily accompanied by it, or both, this quality or combination of qualities is identical with goodness. If, for example, it is believed that whatever is pleasant is and must be good, or that whatever is good is and must be pleasant, or both, it is committing the naturalistic fallacy to infer from this that goodness and pleasantness are one and the same quality. The naturalistic fallacy is the assumption that because the words 'good' and, say, 'pleasant' necessarily describe the same objects, they must attribute the same quality to them.[1]
>
> —Arthur N. Prior, *Logic And The Basis Of Ethics*

In defense of ethical non-naturalism, Moore's argument is concerned with the semantic and metaphysical underpinnings of ethics. In general, opponents ofethical naturalism reject ethical conclusions drawn from natural facts.

Moore argues that good, in the sense of intrinsic value, is simply ineffable: it cannot be defined because it is not a natural property, being "one of those innumerable objects of thought which are themselves incapable of definition, because they are the ultimate terms by reference to which whatever *is* capable of definition must be defined".[2] On the other hand, ethical naturalists eschew such principles in favor of a more empirically accessible analysis of what it means to be good: for example, in terms of pleasure in the context of hedonism.

> That "pleased" does not mean "having the sensation of red", or anything else whatever, does not prevent us from understanding what it does mean. It is enough for us to know that "pleased" does mean "having the sensation of pleasure", and though pleasure is absolutely indefinable, though pleasure is pleasure and nothing else whatever, yet we feel no difficulty in saying that we are pleased. The reason is, of course, that when I say "I am pleased", I do not mean that "I" am the same thing as "having pleasure". And similarly no difficulty need be found in my saying that "pleasure is good" and yet not meaning that "pleasure" is the same thing as "good", that pleasure *means* good, and that good *means* pleasure. If I were to imagine that when I said "I am pleased", I meant that I was exactly the same thing as "pleased", I should not indeed call that a naturalistic fallacy, although it would be the same fallacy as I have called naturalistic with reference to Ethics.
>
> *— G. E. Moore, Principia Ethica § 12*

In §7, Moore argues that a property is either a complex of simple properties, or else it is irreducibly simple. Complex properties can be defined in terms of their constituent parts but a simple property has no parts. In addition to "good" and "pleasure", Moore suggests that colour qualia are undefined: if one wants to understand yellow, one must see examples of it. It will do no good to read the dictionary and learn that "yellow" names the colour of egg yolks and ripe lemons, or that "yellow" names the primary colour between green and orange on the spectrum, or that the perception of yellow is stimulated by electromagnetic radiation with a wavelength of between 570 and 590 nanometers, because yellow is all that and more, by the open question argument.

Bernard Williams called Moore's use of the term 'naturalistic fallacy' a "spectacular misnomer", the question being metaphysical, as opposed to rational.[3]

[edit]Appeal to nature

Main article: Appeal to nature

Some people use the phrase "naturalistic fallacy" or "appeal to nature" to characterize inferences of the form "This behaviour is natural; therefore, this behaviour is morally acceptable" or "This property is unnatural; therefore, this property is undesireable." Such inferences are common in discussions of homosexuality, environmentalism and veganism.

The naturalistic fallacy is the idea that what is found in nature is good. It was the basis for Social Darwinism, the belief that helping the poor and sick would get in the way of evolution, which

depends on the survival of the fittest. Today, biologists denounce the Naturalistic Fallacy because they want to describe the natural world honestly, without people deriving morals about how we ought to behave—as in: If birds and beasts engage in adultery, infanticide, cannibalism, it must be OK). The moralistic fallacy is that what is good is found in nature. It lies behind the bad science in nature-documentary voiceovers: lions are mercy-killers of the weak and sick, mice feel no pain when cats eat them, dung beetles recycle dung to benefit the ecosystem and so on. It also lies behind the romantic belief that humans cannot harbor desires to kill, rape, lie, or steal because that would be too depressing or reactionary.[4]
—Steven Pinker

[edit]Criticism

Some philosophers reject the naturalistic fallacy and/or suggest solutions for the proposed is-ought problem.

Sam Harris argues that it is possible to derive "ought" from "is", and even that it has already been done to some extent. [5][6] He sees morality as a budding science. This view is critical of Moore's "simple indefinable terms" (which amount to qualia), arguing instead that such terms actually can be broken down into constituents.

See also Responses to the (is-ought problem)

[edit]See also

- Appeal to nature
- Appeal to novelty
- Appeal to tradition
- Definist fallacy
- Evolution of morality
- Fact-value distinction
- Meta-ethics
- Moralistic fallacy
- Philosophical naturalism
- Norm (philosophy)
- Open Question Argument
- Value theory

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[edit]External links

- Appeal to Nature entry in *The Fallacy Files*
- Principia Ethica
- G.E. Moore entry in the *Stanford Encyclopedia of Philosophy*
- Moral non-naturalism entry in the *Stanford Encyclopedia of Philosophy*

Reductio ad Hitlerum

From Wikipedia, the free encyclopedia

Reductio ad Hitlerum, also ***argumentum ad Hitlerum***, (Latin for "reduction to" and "argument to" and dog Latin for "Hitler" respectively) is a term coined by conservative philosopher Leo Straussin 1951.[1] According to Strauss, the *Reductio ad Hitlerum* is an informal fallacy that consists of trying to refute an opponent's view by comparing it to a view that would be held by Adolf Hitler or the Nazi Party.

According to Strauss, *Reductio ad Hitlerum* is a form of *ad hominem* or *ad misericordiam*, a fallacy of irrelevance, in which a conclusion is suggested based solely on something's or someone's origin rather than its current meaning. The suggested rationale is one of guilt by association. Its name is a variation on the term reductio ad absurdum.[citation needed]

Reductio ad Hitlerum is sometimes called *playing the Nazi card*,[2] by analogy to playing the race card.[citation needed] According to its critics and proponents, it is a tactic often used to derail arguments, because such comparisons tend to distract and anger the opponent.[2]

Contents

[hide]

1 Fallacious nature of the argument
2 History of the term
3 Invocations of the fallacy
4 See also
5 References
6 External links

[edit]Fallacious nature of the argument

Reductio ad Hitlerum is no more than guilt by association, a form of association fallacy.[2][3] The fallacy claims that a policy leads to—or is the same as—one advocated or implemented by Adolf Hitler or the Third Reich, and so "proves" that the original policy is undesirable. For example: "Hitler loved animals, so animal protection is a fascist activity [because the things Hitler did were wrong, or because it could lead to results ideologically or morally aligned with Hitler]." Used broadly enough, *ad Hitlerum* can encompass more than one questionable cause fallacy type, by both inverting cause and effect and by linking an alleged cause to wholly unrelated consequences. For example, Hitler was fond of dogs and children, but to argue that affection for dogs and children is wrong on this basis is not persuasive.

Various criminals, controversial religious and political figures, regimes, and atrocities other than those caused by Hitler, the Nazis and the Holocaust can be used for the same purposes. For example, a *reductio ad Stalinum* could assert that atheism is a dangerous philosophy because Stalin was an atheist for most of his life.[4]

The fallacious nature of *reductio ad Hitlerum* is easily illustrated by identifying *X* as something that Adolf Hitler or his supporters did promote but which is not considered unethical, such as painting, enjoying classical music, or owning dogs. Misapplication of the fallacy has also been criticised for rejecting reasonable comparisons. By invoking *reductio ad Hitlerum*, an opponent's view is ridiculed even though the comparison may be relevant.[5][not in citation given]

Another instance of *reductio ad Hitlerum* is asking a question of the form "You know who else...?" with the deliberate intent of impugning a certain idea or action by implying Hitler held that idea or performed such action.[6]

[edit]History of the term

The phrase *reductio ad Hitlerum* is first known to have been used in an article written by University of Chicago professor Leo Strauss for "Measure: a critical journal" in Spring 1951;[1] it was made famous in a book by the same author published in 1953 [7] *Natural Right and History*, Chapter II:

In following this movement towards its end we shall inevitably reach a point beyond which the scene is darkened by the shadow of Hitler. Unfortunately, it does not go without saying that in our examination we must avoid the fallacy that in the last decades has frequently been used as a substitute for the *reductio ad absurdum*: the *reductio ad Hitlerum*. A view is not refuted by the fact that it happens to have been shared by Hitler.

The phrase was derived from the legitimate logical argument called *reductio ad absurdum*. The *argumentum* variant takes its form from the names of many classic fallacies, such as *argumentum ad hominem*. The *ad Nazium* variant may be further derived, humorously, from *argumentum ad nauseam*.

In 2000 traditionalist Catholic Thomas Fleming described its use against traditional values:

Leo Strauss called it the reductio ad Hitlerum. If Hitler liked neoclassical art, that means that classicism in every form is Nazi; if Hitler wanted to strengthen the German family, that makes the traditional family (and its defenders) Nazi; if Hitler spoke of the "nation" or the "folk," then any invocation of nationality, ethnicity, or even folkishness is Nazi ...[8]

[edit]Invocations of the fallacy

In 1991, Professor Michael André Bernstein alleged *reductio ad Hitlerum* over a full-page advertisement placed in *The New York Times* by the Lubavitch community, following the Crown Heights Riot, under the heading "This Year Kristallnacht Took Place on August 19th Right Here in Crown Heights." Henry Schwarzschild, who had witnessed Kristallnacht, wrote to the *New York Times*that "however ugly were the anti-Semitic slogans and the assaultive behavior of people in the streets [during the Crown Heights riots]... one thing that clearly did not take place was a Kristallnacht."[9]

American conservative radio host Glenn Beck is often criticized for his frequent use of *reductio ad Hitlerum*, including a controversial statement comparing the victims of the 2011 Norway attacksto members of the Hitler Youth.[10] Beck has also compared the National Endowment for the Arts to Joseph Goebbels[11] and ACORN to Hitler's "Brown Shirt" soldiers.[12]

[edit]See also

- Godwin's law
- Hannibal ad portas ("Hannibal is at the gates") – previous invocation of historical threat
- List of fallacies

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External links

- 11 People Who Have Unfairly Been Compared To Hitler - slideshow by *The Huffington Post*
- "Is it ever OK to call someone a Nazi?". *BBC Online* (BBC News). 14 July 2010.
- Toying with Hitler and History - slideshow by *Der Spiegel*

Godwin's law

From Wikipedia, the free encyclopedia

Godwin's law (also known as **Godwin's Rule of Nazi Analogies** or **Godwin's Law of Nazi Analogies**[1][2]) is an argument made by Mike Godwin in 1990[2] that has become an Internet adage. It states: "As an online discussion grows longer, the probability of a comparison involving Nazis or Hitler approaches 1."[2][3] In other words, Godwin observed that, given enough time, in*any* online discussion—regardless of topic or scope—someone inevitably makes a comparison to Hitler or the Nazis.

Godwin's law is often cited in online discussions as a deterrent against the use of arguments in the widespread *Reductio ad Hitlerum* form.[*citation needed*] The *Reductio ad Hitlerum* attempts to refute a view because it has been held by Hitler.[4] The rule does not make any statement about whether any particular reference or comparison to Adolf Hitler or the Nazis might be appropriate, but only asserts that the likelihood of such a reference or comparison arising increases as the discussion progresses, irrespective of whether it is appropriate. Precisely because such a comparison or reference may sometimes be appropriate, Godwin has argued that overuse of Nazi and Hitler comparisons should be avoided, because it robs the valid comparisons of their impact.[5]

Although in one of its early forms Godwin's law referred specifically to Usenet newsgroup discussions,[6] the law is now often applied to any threaded online discussion, such as forums, chat rooms and blog comment threads, and has been invoked for the inappropriate use of Nazi analogies in articles or speeches.[7]

Contents

[hide]

1 Corollaries and usage
2 History
3 See also
4 Notes
5 Further reading
6 External links

[edit]Corollaries and usage

There are many corollaries to Godwin's law, some considered more canonical (by being adopted by Godwin himself)[3] than others.[1] For example, there is a tradition in many newsgroups and other Internet discussion forums that once such a comparison is made, the thread is finished and whoever mentioned the Nazis has automatically lost whatever debate was in progress. The coupling of this corollary with the initial statement of the law proves every threaded discussion to be finite in length.[8] This principle is itself frequently referred to as Godwin's law. It is considered poor form to raise such a comparison arbitrarily with the motive of ending the thread. There is a widely recognized corollary that any such ulterior-motive invocation of Godwin's law will be unsuccessful.[9]

Godwin's law applies especially to inappropriate, inordinate, or hyperbolic comparisons of other situations (or one's opponent) with Nazis. The law and its corollaries would not apply to discussions covering known mainstays of Nazi Germany such as genocide, eugenics or racial superiority, nor, more debatably, to a discussion of other totalitarian regimes or ideologies, if that was the explicit topic of conversation, since a Nazi comparison in those circumstances may be appropriate, in effect committing the fallacist's fallacy. Whether it applies to humorous use or references to oneself is open to interpretation, since this would not be a fallacious attack against a debate opponent.

While falling foul of Godwin's law tends to cause the individual making the comparison to lose their argument or credibility, Godwin's law itself can be abused as a distraction, diversion or even ascensorship, fallaciously miscasting an opponent's argument as hyperbole when the comparisons made by the argument are actually appropriate.[10] Similar criticisms of the "law" (or "at least the distorted version which purports to prohibit all comparisons to German crimes") have been made by Glenn Greenwald.[11]

[edit]History

Godwin has stated that he introduced Godwin's law in 1990 as an experiment in memetics.[2]

Godwin's law does not claim to articulate a fallacy; it is instead framed as a memetic tool to reduce the incidence of inappropriate hyperbolic comparisons. "Although deliberately framed as if it were a law of nature or of mathematics, its purpose has always been rhetorical and pedagogical: I wanted folks who glibly compared someone else to Hitler or to Nazis to think a bit harder about the Holocaust," Godwin has written.[12]

[edit]See also

Internet portal

- Association fallacy
- Reductio ad Hitlerum
- List of adages named after people

[edit]Notes

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External links

Look up ***godwin's law*** in Wiktionary, the free dictionary.

Listen to this article (info/dl)

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This audio file was created from a revision of the "Godwin's law" article dated 2005-07-01, and does not reflect subsequent edits to the article. (Audio help)

More spoken articles

- Godwin's law FAQ (alternate link)
- Godwin's law at the Public Domain Jargon File
- "I Seem to be a Verb"; Mike Godwin's commentary on the 18th anniversary of Godwin's law
- My Nazi Can Beat Up Your Nazi by Michael Sietzman
- "Is it ever OK to call someone a Nazi?". *BBC Online* (BBC News). 2010-07-14.
- *Voices on Antisemitism* Interview with Mike Godwin from the U.S. Holocaust Memorial Museum

Straw man

From Wikipedia, the free encyclopedia

This article is about the logical fallacy. For other uses, see Straw man (disambiguation).

"Man of straw" redirects here. For the novel by Heinrich Mann, see Der Untertan.

A **straw man** or **straw person**, also known in the UK as an Aunt Sally,[1][2] is a type of argument and is an informal fallacy based on misrepresentation of an opponent's position.[3] To "attack a straw man" is to create the illusion of having refuted a proposition by replacing it with a superficially similar yet unequivalent proposition (the "straw man"), and to refute it, without ever having actually refuted the original position.[3][4]

Contents

[hide]

1 Origin

2 Structure

3 Examples

4 See also

5 References

6 External links

[edit]Origin

This section requires expansion.*(October 2012)*

As a fallacy, the identification and name of straw man arguments are of relatively recent date, although Aristotle makes remarks that suggest a similar concern; Douglas Walton identified "the first inclusion of it we can find in a textbook as an informal fallacy" in Stuart Chase's *Guides to Straight Thinking* from 1956 (p. 40).[5][6] Oddly enough Hamblin's classic text *Fallacies* (1970), neither mentions it as a distinct type, nor even as a historical term.[5][6]

The origins of the term are unclear. The usage of the term in rhetoric suggests a human figure made of straw which is easily knocked down or destroyed, such as a military training dummy,scarecrow, or effigy.[7] The rhetorical technique is sometimes called an Aunt Sally in the UK, with reference to a traditional fairground game in which objects are thrown at a fixed target. One common folk etymology is that it refers to men who stood outside courthouses with a straw in their shoe in order to indicate their willingness to be a false witness.[8]

[edit]Structure

The straw man fallacy occurs in the following pattern of argument:

1. **Person 1 has position X.**
2. **Person 2 disregards certain key points of X and instead presents the superficially similar position Y.** The position Y is a distorted version of X and can be set up in several ways, including:
    1. Presenting a misrepresentation of the opponent's position.
    2. Quoting an opponent's words out of context—i.e., choosing quotations that misrepresent the opponent's actual intentions (see fallacy of quoting out of context).[4]

   3. Presenting someone who defends a position poorly as *the* defender, then refuting that person's arguments—thus giving the appearance that *every* upholder of that position (and thus the position itself) has been defeated.[3]
   4. Inventing a fictitious persona with actions or beliefs which are then criticized, implying that the person represents a group of whom the speaker is critical.
   5. Oversimplifying an opponent's argument, then attacking this oversimplified version.
3. **Person 2 attacks position Y, concluding that X is false/incorrect/flawed.**

This reasoning is fallacious because attacking a distorted version of a position does not address the actual position.

[edit]Examples

A: *Sunny days are good.*

B: *If all days were sunny, we'd never have rain, and without rain, we'd have famine and death.*

In this case, B falsely frames A's claim to imply that A believes **only** sunny days are good, and B argues against that assertion. A actually asserts that sunny days are good and, in fact, says nothing about rainy days.

C: *We should give children ice cream after every school day.*

D: *That would be rather bad for their health.*

C: *Do you want our children to starve?*

> Person C says that children should be given ice cream after every school day. D replies to that statement assuming that children would be getting this in addition to their regular meals, and states that this would be unhealthy. Person C replies with the unreasonable suggestion that if children were not given ice cream, they would starve. Person C does this because it is harder for Person D to argue that children should starve than to argue that children should not be unhealthy.
>
> Christopher Tindale presents, as an example, the following passage from a draft of a bill (HCR 74) considered by the Louisiana State Legislature in 2001:[5]
>
> Whereas, the writings of Charles Darwin, the father of evolution, promoted the justification of racism, and his books *On the Origin of Species* and *The Descent of Man* postulate a hierarchy of superior and inferior races. . . . Therefore, be it resolved that the legislature of Louisiana does hereby deplore all instances and all ideologies of racism, does hereby reject the

core concepts of Darwinist ideology that certain races and classes of humans are inherently superior to others, and does hereby condemn the extent to which these philosophies have been used to justify and approve racist practices.

Tindale comments that "the portrait painted of Darwinian ideology is a caricature, one not borne out by any objective survey of the works cited. That similar misrepresentations of Darwinian thinking have been used to justify and approve racist practices is beside the point: the position that the legislation is attacking and dismissing is a Straw Man. In subsequent debate this error was recognized, and the eventual bill omitted all mention of Darwin and Darwinist ideology."[5]

[edit]See also

- List of fallacies
- Ad hominem
- Cherry picking (fallacy)
- Fallacy of quoting out of context
- Straw man proposal
- Straw man (law)
- Red herring

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[edit]External links

- The Straw Man Fallacy at the Fallacy Files
- Straw Man, more examples of straw man arguments

Texas sharpshooter fallacy

From Wikipedia, the free encyclopedia

The **Texas sharpshooter fallacy** is an informal fallacy in which pieces of information that have no relationship to one another are called out for their similarities, and that similarity is used for claiming the existence of a pattern.[1] This fallacy is the philosophical/rhetorical application of the multiple comparisons problem (in statistics) and apophenia (in cognitive psychology). It is related to the clustering illusion, which refers to the tendency in human cognition to interpret patterns in randomness where none actually exist.

The name comes from a joke about a Texan who fires some shots at the side of a barn, then paints a target centered on the biggest cluster of hits and claims to be a sharpshooter.[2][3]

Contents

[hide]

1 Structure
2 Examples
3 See also
    ○ 3.1 Related fallacies
4 References
5 External links

[edit]Structure

The Texas sharpshooter fallacy often arises when a person has a large amount of data at his disposal, but only focuses on a small subset of that data. Random chance may give all the elements in that subset some kind of common property (or pair of common properties, when arguing for correlation). If the person fails to account for the likelihood of finding *some* subset in the large data with *some* common property strictly by chance alone, that person is likely committing a Texas Sharpshooter fallacy.

To illustrate, if we pay attention to a cluster of cancer cases in a certain sub-population and then draw our "circle" around the smallest area that includes this cluster, this sample will appear to be suffering an unusually high rate of cancer, but if we included the rest of the population, the incidence would regress to the average.[4]

The fallacy is characterized by a lack of specific hypothesis prior to the gathering of data, or the formulation of a hypothesis only after data has already been gathered and examined.[5] Thus, it typically does not apply if one had an *ex ante*, or prior, expectation of the particular relationship in question before examining the data. For example one might, prior to examining the information, have in mind a specific physical mechanism implying the particular relationship. One could then use the information to give support or cast doubt on the presence of that mechanism. Alternatively, if additional information can be generated using the same process as the original information, one can use the original information to construct a hypothesis, and then test the hypothesis on the new data. See hypothesis testing. What one *cannot* do is use *the same* information to construct *and* test the same hypothesis (see hypotheses suggested by the data) — to do so would be to commit the Texas sharpshooter fallacy.

[edit]Examples

- A Swedish study in 1992 tried to determine whether or not power lines caused some kind of poor health effects. The researchers surveyed everyone living within 300 meters of high-voltage power lines over a 25-year period and looked for statistically significant increases in rates of over 800 ailments. The study found that the incidence of childhood leukemia was four times higher among those that lived closest to the power lines, and it spurred calls to action by the Swedish government. The problem with the conclusion, however, was that the number of potential ailments, i.e. over 800, was so large that it created a high probability that at least one ailment would exhibit statistically significant difference just by chance alone. Subsequent studies failed to show any links between power lines and childhood leukemia, neither in causation nor even in correlation.[6]
- Attempts to find cryptograms in the works of William Shakespeare, which tended to report results only for those passages of Shakespeare for which the proposed decoding algorithm produced an intelligible result. This could be explained as an example of the fallacy because passages which do not match the algorithm have not been accounted for.
- Attempts to find cryptograms in the Bible, and the Quran Code.
- This fallacy is often found in modern-day interpretations of the quatrains of Nostradamus. Nostradamus' quatrains are often liberally translated from the original (archaic) French, stripped of their historical context, and then applied to support the conclusion that Nostradamus predicted a given modern-day event, after the event actually occurred. For instance, the Nostradamus lines that supposedly predicted 9/11 were taken from three separate and unrelated passages and a fictional line was added.[7]

[edit]See also

- Anthropic principle
- Availability heuristic

- Confirmation bias
- Hoyle's fallacy
- Look-elsewhere effect
- Postdiction
- Ramsey theory

[edit]Related fallacies

- Cum hoc ergo propter hoc
- Post hoc ergo propter hoc
- Correlative based fallacies
- Moving the goalpost, a related fallacy used to obtain the opposite conclusion.

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[edit]External links

- Fallacy files entry

Tu quoque

From Wikipedia, the free encyclopedia

This article is about the logical fallacy. For the historical quotation "Tu quoque, Brute, fili mi", see Et tu, Brute?. For the play by John Cooke, see Greene's Tu Quoque.

A CASE OF TU QUOQUE.
She. "How do you like my new Hat?"
Sutherland Highlander. "By Jove, what extraordinary Headgear you women do wear!"

A case of Tu quoque: "By Jove, what extraordinary headgear you women do wear!"—ironic reference in *Punch*

Tu quoque (pron.: /tuːˈkwoʊkwiː/),[1] (Latin for "you, too" or "you, also") or the **appeal to hypocrisy**, is a logical fallacy that attempts to discredit the opponent's position by asserting the opponent's failure to act consistently in accordance with that position; it attempts to show that a criticism or objection applies equally to the person making it. This dismisses someone's point of view based on criticism of the person's inconsistency, and not the position presented,[2] whereas a person's inconsistency should not discredit their position. Thus, it is a form of the *ad hominem* argument.[3] To clarify, although the person being attacked might indeed be acting inconsistently or hypocritically, this does not invalidate their argument.

Contents

[hide]

1 Fallacious use

2 Legal aspects

- 2.1 Common law
- 2.2 International law

3 See also

4 References

[edit]Fallacious use

In many cases *tu quoque* arguments are used in a logically fallacious way, to draw a conclusion which is not supported by the premises of the argument.

This form of the argument, familiar from everyday disagreements, is as follows:

A makes criticism *P*.
A is also guilty of *P*.
Therefore, *P* is dismissed.

Examples:

- "*He cannot accuse me of libel because he was just successfully sued for libel.*"

- Person 1: It should be illegal to make clothing out of animals.
- Person 2: But, you are wearing a leather jacket.

- Person 1: People shouldn't drink. It's a very damaging habit.
- Person 2: But you're drunk.

[edit]Legal aspects

[edit]Common law

In common law, a legal maxim exists stating a person cannot approach the courts of equity with unclean hands. If there is a nexus between the applicant's wrongful act and the rights the applicant wishes to enforce, the court may not grant the applicant's request.[*citation needed*]

[edit]International law

This argument has been unsuccessfully used before the International Criminal Tribunal for the former Yugoslavia in several cases when the accused tried to justify their crimes by insisting that the opposing side had also committed such crimes. However, the argument *tu quoque*, from the basis of international humanitarian law is completely irrelevant, as the ICTY has stated in these cases.[4][5][6][7]

Historically, however, at the Nuremberg trial of Karl Dönitz, *tu quoque* was accepted not as a defense to the crime[*clarification needed*] itself, or to the prosecution proceedings, but only as a mitigation of punishment.[8] At the Dachau trials, Otto Skorzeny and officers of Panzer Brigade 150 successfully used *tu quoque* evidence to be acquitted of violating the laws of war by using American uniforms to infiltrate Allied lines in the false flag Operation Greif in the Battle of the Bulge. Evidence was introduced that the Allies themselves had on at least one occasion worn German uniforms,[*citation needed*] demonstrating that the prosecution was not clean with regards to this particular crime.

In these cases of international law, the argument is generally used to challenge the validity of the proceedings rather than as a defense of the acts in question or challenging the law as a whole. This is on the basis that if all sides committed such acts then, if the court is fair and seeking justice rather than vengeance (a common criticism against earlier international courts), all sides must be indicted and punished for their actions, and if this does not happen then the court is unjust, and thus illegitimate.[*citation needed*]

In the case of the Nuremberg trials, charges were only being leveled at the former Nazi regime, and as such it was felt that the *tu quoque* argument in some cases to be relevant. In fact both at the time and in the subsequent decades many jurists and scholars have argued that the whole proceedings should be seen as illegitimate because Allied crimes were not indicted or even acknowledged even when they overlapped with Nazi crimes; most obviously many German leaders were charged with a conspiracy to wage a war of aggression in the Nazi-Soviet pact, meaning that if a criminal conspiracy existed then the Soviets must have been party to it but no charges were brought against them.[*citation needed*]

In the case of the ICTY, charges were leveled against all sides and all persons that were believed to have been complicit in crimes against humanity, and since the crimes of another cannot be held to permit reciprocal crimes, the *tu quoque* argument was seen as being irrelevant.[*citation needed*]

[edit]See also

- Pot calling the kettle black
- And you are lynching Negroes
- Unclean hands
- Whataboutism

[edit]References

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3. ^ Logical Fallacy: Tu Quoque
4. ^ Judgment of the Trial Chamber in Case *Kupreškić et al.*. (January 2000), para. 765.
5. ^ Judgment of the Trial Chamber in Case *Kunarac et al.*. (February 2001), para. 580.
6. ^ Judgment of the Appeals Chamber in Case *Kunarac et al.*. (January 2002), para. 87.
7. ^ Judgment of the Trial Chamber in Case *Limaj et al.* (November 2005), para. 193.
8. ^ Yee, Sienho (2004), "The Tu Quoque Argument as a defence to International Crimes, Prosecution, or Punishment", *Chinese Journal of International Law*, **3**, pp. 87–133.

Two wrongs make a right

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Look up *two wrongs make a right* in Wiktionary, the free dictionary.

Look up *two wrongs don't make a right* in Wiktionary, the free dictionary.

In rhetoric and ethics, **two wrongs make a right** and **two wrongs don't make a right** are phrases that denote philosophical norms. "Two wrongs make a right" is a fallacy of relevance, in which an allegation of wrongdoing is countered with a similar allegation. Its antithesis, "two wrongs don't make a right", is a proverb used to rebuke or renounce wrongful conduct as a response to another's transgression.

Contents

[hide]

1 Two wrongs make a right
2 Two wrongs do not make one right
3 Criticism
4 History
5 See also
6 References
7 External links

[edit]Two wrongs make a right

This is an informal fallacy that occurs when assuming that, if one wrong is committed, then another wrong will cancel it out.

- Speaker A: You shouldn't embezzle from your employer. It's against the law.
- Speaker B: My employer cheats on their taxes. That's against the law, too!

The unstated premise is that breaking the law (or the wrong) is justified, as long as the other party also does so. It is often used as a red herring, or an attempt to change or distract from the issue. For example:

- Speaker A: President Williams lied in his testimony to Congress. He should not do that.
- Speaker B: But you are ignoring the fact that President Roberts lied in his Congressional testimony!

Even if President Roberts lied in his Congressional testimony, this does not establish a precedent that makes it acceptable for President Williams to do so as well. (At best, it means Williams is**no worse than** Roberts.) By invoking the fallacy, the contested issue of "lying" is ignored.

The *tu quoque* fallacy is a specific type of "two wrongs make a right". Accusing another of not practicing what they preach, while appropriate in some situations, does not in itself invalidate an action or statement that is perceived as contradictory.

[edit]Two wrongs do not make one right

Two wrongs don't make a right is a proverb that contradicts this fallacy – a wrongful action is not a morally appropriate way to correct or cancel a previous wrongful action.

[edit]Criticism

Common use of the term, in the realm of business ethics, has been criticized by scholar Gregory S. Kavka writing in the *Journal of Business Ethics*. Kavka refers back to philosophical concepts of retribution by Thomas Hobbes. He states that if something supposedly held up as a moral standard or common social rule is violated enough in society, then an individual or group within society can break that standard or rule as well since this keeps them from being unfairly disadvantaged. As well, in specific circumstances violations of social rules can be defensible if done as direct responses to other violations. For example, Kavka states that it is wrong to deprive someone of their property but it is right to take property back from a criminal who takes another's property in the first place. He also states that one should be careful not to use this ambiguity as an excuse recklessly to violate ethical rules.[1]

Conservative journalist Victor Lasky wrote in his book *It Didn't Start With Watergate* that while two wrongs don't make a right, if a set of immoral things are done and left un-prosecuted, this creates a legal precedent. Thus, people who do the same wrongs in the future should rationally expect to get away as well. Lasky uses as an analogy the situation between John F. Kennedy's wiretapping of Martin Luther King, Jr. (which led to nothing) and Richard Nixon's actions in Watergate (which Nixon thought would also lead to nothing).[2]

[edit]History

The phrase "two wrongs infer one right" appears in a poem dated to 1734, published in *The London Magazine*.[3]

[edit]See also

- Norm (philosophy)
- An eye for an eye
- Tit for tat
- Punishment
- Retributive justice

[edit]References

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2. ^ *It Didn't Start With Watergate*. Victor Lasky.
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> An orient star led, thro' his blind- / Side, to a prize his eye of mind: / The lightning said, its he; in Spight / Of fate **two wrongs infer one right**. / let fly; well shot! thanks to my Spark; / A blind boy, once, has cleft the mark. /
>
> — *The Moral (translated - origine ? - in Hudibrastic)*

[1]

[edit]External links

- The Fallacy Files: Two Wrongs Make a Right
- Nizkor: two wrongs make a right

Conditional or questionable fallacies

- Black swan blindness – the argument that ignores low probability, high impact events, thus down playing the role of chance and under-representing known risks[66]
- Broken window fallacy – an argument which disregards lost opportunity costs (typically non-obvious, difficult to determine or otherwise hidden) associated with destroying property of others, or other ways of externalizing costs onto others. For example, an argument that states breaking a window generates income for a window fitter, but disregards the fact that the money spent on the new window cannot now be spent on new shoes.[67]
- Definist fallacy – involves the confusion between two notions by defining one in terms of the other.[68]
- Naturalistic fallacy – attempts to prove a claim about ethics by appealing to a definition of the term "good" in terms of either one or more claims about natural properties (sometimes also taken to mean the appeal to nature)[*citation needed*] or God's will.
- Slippery slope (thin edge of the wedge, camel's nose) – asserting that a relatively small first step inevitably leads to a chain of related events culminating in some significant impact/event that should not happen, thus the first step should not happen. While this fallacy is a popular one, the it is, in its essence, an appeal to probability fallacy. (e.g if person x does y then z would (probably) occur, leading to q, leading to w, leading to e.) [

Black swan blindness

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Black Swan Blindness is a concept developed by Bent Flyvbjerg and Alexander Budzier at Saïd Business School, University of Oxford.[*dubious* – *discuss*] The concept of Black Swan Blindness explains how decision-makers are commonly surprised by out-of-control events, which often costs them their jobs and even their companies even though they know of Black Swan Events.[1] While black swan blindness has disastrous consequences it itself is caused by well known managerial fallacies, such as:[2]

- Illusion of Control
- Organizational desirability
- Self-service

The key symptom of black swan blindness are performance management systems that only track averages or expectation values and ignore the variability of performance. The ignorance of an important aspect of risk and uncertainty leads to misguided management attention while exposing organizations to the impact of outlying events, so called black swans.[2]Flyvbjerg's and Budzier's concept and recommendations as applied to IT Projects have been challenged on conceptual and practical grounds [3]

[edit]Examples

Famous examples include:[4]

- FoxMeyer Drugs was the 4th largest US pharma distributor with a balance sheet of USD 5bn headquartered in Carrollton, Texas. FoxMeyer's Black Swan was named Delta III it kicked-off in 1993 and planned to implement SAP R/3 for financial managmeent as well as Pinnacle for warehouse automation with Andersen as the implementation partner. The system was designed to replace FoxMeyer's mainframe Unisys system to increase the volume it can handle. The project was planned to deliver the new R/3 system and the warehouse automation in 18 month, at costs of USD 65m, and save USD 40m annually. However, not uncommonly SAP and Andersen used the project as a development corporation. The actual cost of the project spiralled to over USD 100m. Thomas Anderson CEO and project champion was forced to leave but the change in leadership came too late. The automation of the warehouse failed and resulted in USD 34m lost inventory. Even more troublesome was the R/3 system performance. FoxMeyer was able to process only 2% of the order volume (10,000 orders per night) that the mainframe system handled. This serious issues in the scalability of the R/3 system came at the time when the company won a major new client. The ICT project erased FoxMeyer's profitability and in 1996 the FoxMeyer was forced into bankruptcy.

- The Black Swan for Levi Strauss happened in Q2/2008 when the company's net income dropped by 98% to USD 1m compared to Q2/07. Since 2003 Levi Strauss underwent a major ERP software implementation scheduled to finish in 2010. The global ERP template was first rolled out into the Asian subsidiaries and in 2008 reached the US. The project was designed to replace a complex architecture of Baan in Europe, a bespoke system in Canada and Asia, and the US using a mix of mainframe systems. Levi Strauss tried to clean up the IT architecture to migrate to one common SAP system with the help of implementation partner Deloitte. The project costs were estimated to be between USD 1-5m, excl. consulting fees. Before rolling out the system to the US Levi Strauss was forced to integrate its systems into Wal-Marts systems increasing the number of complexities in their IT architecture. The company suddenly faced a tremendously different approach to internal controls and only narrowly avoided the need to restate their financial reports. Rolling out new internal financial processes and check procedures lead to a massive hindrance in Levi Strauss' order fulfilment, forcing it three distribution centres in the US to close down for a full week, despite the companies attempt to mitigate the risks by pre-shipping orders in Q1 to wholesalers that normally would have shipped in Q2. The company took a USD 192.5m hit to its bottom-line but was able to absorb this shop. David Bergen the CIO who joined Levi Strauss in 2000 had to leave. Levi Strauss stayed with SAP and is currently undergoing a private cloud experiment to reduce the IT cost.

- Hershey's implemented a new order taking and fulfillment system. The project cost USD 112m and comprised a mix of SAP's ERP systems, Siebel's CRM systems, and Manugistic's SCM system supported by Accenture as the integration partner. The project was initially planned to go-live in a Big Bang in June 1999 but the project was delayed by 3 months. During the month of September, however, Hershey's was still fixing errors in its shipping and order fulfillment systems not being able to deliver their products to their customers during the busy Halloween period. In total Hershey's was not able to deliver orders worth USD 100m for Halloween 1999. The news made front page of the Wall Street Journal and stock prices fell 8%. In October, 1999 Hershey's was forced to report a 12.4% drop in quarterly sales to USD 87.6m (earnings -18.6%). The company said computer problems with Hershey's SAP system have created a backlog of orders and slower deliveries. Hershey's stayed with SAP and its CEO (Wolfe retired in 2001).

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Parable of the broken window

From Wikipedia, the free encyclopedia

(Redirected from Broken window fallacy)

This article is about the economic parable. For the criminological theory, see Broken windows theory.

This article **is written like a personal reflection or essay rather than an encyclopedic description of the subject**. Please help improve it by rewriting it in an encyclopedic style. *(July 2011)*

The **parable of the broken window** was introduced by Frédéric Bastiat in his 1850 essay *Ce qu'on voit et ce qu'on ne voit pas* (*That Which Is Seen and That Which Is Unseen*) to illustrate why destruction, and the money spent to recover from destruction, is actually not a net-benefit to society. The parable, also known as the **broken window fallacy** or **glazier's fallacy**, demonstrates how opportunity costs, as well as the law of unintended consequences, affect economic activity in ways that are "unseen" or ignored.

Contents

[hide]

1 The parable
2 Differing interpretations
  ○ 2.1 Bastiat's argument
  ○ 2.2 The opportunity cost of war
  ○ 2.3 The cost of special interests and government
3 Criticisms
  ○ 3.1 Defenses
4 See also
5 References
6 Further reading
7 External links

[edit]The parable

Bastiat's original parable of the broken window from *Ce qu'on voit et ce qu'on ne voit pas* (1850):

Have you ever witnessed the anger of the good shopkeeper, James Goodfellow, when his careless son has happened to break a pane of glass? If you have been present at such a scene, you will most assuredly bear witness to the fact that every one of the spectators, were there even thirty of them, by common consent apparently, offered the unfortunate owner this invariable consolation—"It is an ill wind that blows nobody good. Everybody must live, and what would become of the glaziers if panes of glass were never broken?"

Now, this form of condolence contains an entire theory, which it will be well to show up in this simple case, seeing that it is precisely the same as that which, unhappily, regulates the greater part of our economical institutions.

Suppose it cost six francs to repair the damage, and you say that the accident brings six francs to the glazier's trade—that it encourages that trade to the amount of six francs—I grant it; I have not a word to say against it; you reason justly. The glazier comes, performs his task, receives his six francs, rubs his hands, and, in his heart, blesses the careless child. All this is that which is seen.

But if, on the other hand, you come to the conclusion, as is too often the case, that it is a good thing to break windows, that it causes money to circulate, and that the encouragement of industry in general will be the result of it, you will oblige me to call out, "Stop there! Your theory is confined to that which is seen; it takes no account of that which is not seen."

It is not seen that as our shopkeeper has spent six francs upon one thing, he cannot spend them upon another. It is not seen that if he had not had a window to replace, he would, perhaps, have replaced his old shoes, or added another book to his library. In short, he would have employed his six francs in some way, which this accident has prevented.[1][2]

[edit]Differing interpretations

The implications of the fallacy can also be extended to the glazier. The onlookers assume that this needed window will have a positive effect for the glazier, but in order for this to be true, the glazier must currently have time and supplies available for use. If the glazier has other jobs which demand his time and supplies, this additional job now represents a negative constraint for the glazier in that he may not be able to complete his other jobs on time.

In this case, the broken window (and the boy who broke it) did not provide any net benefit to the town, but rather made the town poorer in future benefits by (at least) the value of one window.

[edit]Bastiat's argument

Austrian theorists, and Bastiat himself, apply the parable of the broken window in a different way. Suppose it was discovered that the little boy was actually hired by the glazier, and paid a franc for every window he broke. Suddenly the same act would be regarded as theft: the glazier was breaking windows in order to force people to hire his services. Yet the facts observed by the onlookers remain true: the glazier benefits from the business at the expense of the baker, the tailor, and so on.

Bastiat argues that people actually do endorse activities which are morally equivalent to the glazier hiring a boy to break windows for him:

Whence we arrive at this unexpected conclusion: "Society loses the value of things which are uselessly destroyed;" and we must assent to a maxim which will make the hair of protectionists stand on end—To break, to spoil, to waste, is not to encourage national labour; or, more briefly, "destruction is not profit."

What will you say, *Moniteur Industriel*[3]—what will you say, disciples of good M. F. Chamans, who has calculated with so much precision how much trade would gain by the burning of Paris, from the number of houses it would be necessary to rebuild?[1][2]

Bastiat is not addressing production — he is addressing the stock of wealth. In other words, Bastiat does not merely look at the immediate but at the longer effects of breaking the window. Moreover, Bastiat does not only take into account the consequences of breaking the window for one group but for all groups, for society as a whole.[4]

Theorists of the Austrian School frequently cite this fallacy and claim that it is a common element of popular thinking (e.g., the "Cash for Clunkers" program,[5] etc.). The 20th century American economist Henry Hazlitt devoted a chapter to it in his book *Economics in One Lesson*.[6]

[edit]The opportunity cost of war

See also: Military Keynesianism

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The argument can be made that war is a benefactor, since historically it often has focused the use of resources and triggered advances in technology and other areas while reducing unemployment. The increased production and employment associated with war often leads some to claim that "war is good for the economy." However, this belief is often given as an example of the broken window fallacy. The money spent on the war effort, for example, is money that cannot be spent on food, clothing, health care, consumer electronics or other areas. The stimulus felt in one sector of the economy comes at a direct—but hidden—cost to other sectors.

Bastiat himself argued against the claim that hiring men to be soldiers was inherently beneficial to the economy in the second chapter of *That Which is Seen, and That Which is Not Seen*, "The Disbanding of Troops":

It is the same with a people as it is with a man. If it wishes to give itself some gratification, it naturally considers whether it is worth what it costs. To a nation, security is the greatest of advantages. If, in order to obtain it, it is necessary to have an army of a hundred thousand men, I have nothing to say against it. It is an enjoyment bought by a sacrifice. Let me not be misunderstood upon the extent of my position. A member of the assembly proposes to disband a hundred thousand men, for the sake of relieving the tax-payers of a hundred millions.

If we confine ourselves to this answer - "The hundred thousand men, and these hundred millions of money, are indispensable to the national security: it is a sacrifice; but without this sacrifice, France would be torn by factions, or invaded by some foreign power," - I have nothing to object to this argument, which may be true or false in fact, but which theoretically contains nothing which militates against economy. The error begins when the sacrifice itself is said to be an advantage because it profits somebody.

Now I am very much mistaken if, the moment the author of the proposal has taken his seat, some orator will not rise and say - "Disband a hundred thousand men! Do you know what you are saying? What will become of them? Where will they get a living? Don't you know that work is scarce everywhere? That every field is overstocked? Would you turn them out of doors to increase competition, and weigh upon the rate of wages? Just now, when it is a hard matter to live at all, it would be a pretty thing if the State must find bread for a hundred thousand individuals? Consider, besides, that the army consumes wine, clothing, arms — that it promotes the activity of manufactures in garrison towns — that it is, in short, the god-send of innumerable purveyors. Why, any one must tremble at the bare idea of doing away with this immense industrial movement."

This discourse, it is evident, concludes by voting the maintenance of a hundred thousand soldiers, for reasons drawn from the necessity of the service, and from economical considerations. It is these considerations only that I have to refute.

A hundred thousand men, costing the tax-payers a hundred millions of money, live and bring to the purveyors as much as a hundred millions can supply. This is that which is seen.

But, a hundred millions taken from the pockets of the tax-payers, cease to maintain these taxpayers and the purveyors, as far as a hundred millions reach. This is that which is not seen. Now make your calculations. Cast up, and tell me what profit there is for the masses?

In addition, war destroys property and lives. The economic stimulus to one nation's defense sector is offset not only by immediate opportunity costs, but also by the costs of the damage and devastation of war to the country it attacks. This forms the basis of a second application of the broken window fallacy: rebuilding what war destroys stimulates the economy, particularly the construction sector. However, immense resources are spent merely to restore pre-war conditions. After a war, there is only a rebuilt city. Without a war, there are opportunities for the same resources to be applied to more fruitful purposes. Instead of rebuilding a destroyed city, the resources could have been used to improve and enlarge the city or build a second one.

One example of the costs of war sometimes given is the many projects postponed or not started until after the end of World War II in the United States. The pent-up demand for roads, bridges, houses, cars, and even radios led to massive inflation in the late 1940s.[citation needed] The war delayed the commercial introduction of television, among other things, and the resources sent overseas to rebuild the rest of the world after the war were not available to the American people for their direct benefit; neither did the war enrich any of these other nations.[citation needed]

According to Hazlitt:

"It is never an advantage to have one’s plants destroyed by shells or bombs unless those plants have already become valueless or acquired a negative value by depreciation and obsolescence. ... Plants and equipment cannot be replaced by an individual (or a socialist government) unless he or it has acquired or can acquire the savings, the capital accumulation, to make the replacement. But war destroys accumulated capital. ... Complications should not divert us from recognizing the basic truth that the wanton destruction of anything of real value is always a net loss, a misfortune, or a disaster, and whatever the offsetting considerations in a particular instance, can never be, on net balance, a boon or a blessing."[7]

[edit]The cost of special interests and government

Bastiat, Hazlitt, and others equated the glazier with special interests, and the little boy with government. Special interests request money from the government (in the form of subsidies, grants, etc.), and the government then forces the taxpayer to provide the funds. The recipients certainly do benefit, so the government action is often regarded by the people as benefiting everyone. But the people are failing to consider the hidden costs: the taxpayers are now poorer by exactly that much money. The food, clothing or other items they might have purchased with that money will now not be purchased—but since there is no way to count "non-purchases," this is a hidden cost, sometimes called opportunity cost. Bastiat referred to this in his essay as "what is not seen". Because the costs are hidden, there is an illusion that the benefits cost nothing. Hazlitt summarized the principle by saying, "Everything we get, outside the free gifts of nature, must in some way be paid for." Robert A. Heinlein popularized a summarization/acronym of the concept called "TANSTAAFL" (*There Ain't No Such Thing As A Free Lunch*).

Common examples of special interest groups practicing the broken window fallacy might be:

- Arguments for public works projects as a way to reduce unemployment. The hidden cost here is of course the tax payer's money, and the special interests are the jobs created by the public works. This is analogous to the fallacy only if in fact the taxation induces opportunity costs and a net social loss, yet public works are not inherently destructive and need not involve demolition for the sake of superflous rebuilding (i.e., intentionally breaking windows). Public works often are genuinely new and additive to shared societal value, independent of any benefits of maintaining a pool of skilled glaziers or other workers.
- Cash for Clunkers which was a program in which the U.S. government paid consumers to trade in antiquated low gas mileage cars for newer, more efficient higher gas mileage cars,

and the trade-ins were subsequently destroyed.[8] A similar program allows for trade-ins of old energy inefficient appliances for more energy efficient appliances. Such programs may be viewed as imposing a net cost only if failing to account for the benefits of expending fewer units of fuel per mile, and the potential added value of decreased pollution. However, the pollution from, and the costs of, the yearly manufacturing of a new fleet of vehicles may outweigh any perceived gains from the improvements in gas mileage.

- Depreciation as a means to increase exports by making goods less expensive to foreigners, and to decrease the demand for imports—which are made more expensive—in order to stimulate the domestic economy. What is not seen is the fact that domestic workers must do more work for less pay, and can purchase less with the proceeds. Essentially, the entire nation takes a pay cut.
- Inflation as a means to stimulate economic activity by making savings worth less and goods worth more, creating an imperative to purchase sooner rather than waiting. What is not seen is the increased risk of no cushion of savings, the stimulation of large amounts of consumer debt, and the loss of purchasing power due to salaries lagging inflation.
- Planned obsolescence, an item designed to break or become undesirable after some period of time.
- Advertisements promoting the replacement of old items with new items; for example, replacing last year's fashions with this year's.

With all of these examples, care must be taken that every factor is taken into account, just as happened in the parable of the broken window: does one know all the costs and benefits? E.g. hiring people to do nothing or to break things and repair them is probably a bad idea. This is the case in the military spending and government employment examples. But if the hired people or the spent money actually result in useful work (however, the term "useful work" is a fallacy in itself — it is not the work that is useful but only the product or result produced by the work), things are less clear. It depends on the amount of useful work delivered compared to the amount of money spent if the spending was a good idea. This is the case in the cash for clunkers, the public works, and the renewable energy examples. This analysis is only necessary, however, when the accomplished result has a future benefit beyond the simple fact of delivering work. As Bastiat shows, the simple accomplishment of useful work can never make such projects a net positive; the glazier also performed useful work. But if a project improves the efficiency of future work, there can be a net benefit. For example, a public works program to build roads creates no wealth simply by virtue of building the road. But in the future, that road may increase trade by improving the efficiency of moving goods and reducing future costs. In such a case, the road may be a net benefit — it is an investment, rather than destruction followed by redistribution. The point of the broken window parable is to show that one cannot ignore the hidden costs of taking wealth to build the road when totalling up any such "net benefit."

[edit]Criticisms

The interpretations assume that the "window" has positive value and that replacing it is not a good investment[citation needed]. In the broader scope, offsetting factors can reduce or even negate the cost of destruction. For example, new technologies developed during a war and forced modernization during postwar reconstruction can cause old technologies to become valueless. Also, if two shopkeepers keep their "window" beyond the point where it would maximize their profit, the shopkeeper whose window is broken is forced to make a good investment - increasing his comparative profit, or rather, reducing his comparative loss. Regardless, while wanton destruction of real value may not be a net loss, it is of course still a misfortune, not a blessing.[9] Others argue that the broken window may not lead to reduction in spending by the victim, but rather, a reduction in excessive savings.[10] "The logic of limited resources only applies when the economy is using most of those limited resources. If there are slack resources, we need merely mobilize some of the slack resources." The *reductio ad absurdum* of breaking 100 windows, then, only applies once underutilised resources have run out, and the tailor is forced to divert resources from more productive means.

Another problem with this being a "fallacy" is that the positive and negative results depend on the financial condition and disposition of the victim. At the low end, the victim simply can't afford to replace the window, or refuses to do so, resulting in almost no economic effect. In the medium range, it is a fallacy and the standard argument above applies. However, at the top end it is an economic benefit[citation needed], especially if too much capital is trapped in high end savings and investment, because the funds used to replace the window will not change the victim's spending habits, but will simply be a minor reduction of his long term savings or investments, or that of his insurer.

It has been argued that the 'parable', while intuitive, does not correspond to actual evidence. For instance, researchers have found that natural disasters can often lead to improved growth in both the short and long term.[11]

[edit]**Defenses**

Bastiat and Austrian theorists hold to a subjective theory of value, which holds that the value of a product is determined by its consumer or owner. Therefore, if the window had a negative value, it is because the owner already wishes it broken. If the proverbial window were old, and the newer proverbial window had a greater value (determined by the shopkeeper's own valuation), then the net increase in value in the economy is the difference between the value of the old and new window. Bastiat and Austrian economists also believe that depreciation and other losses in the value of goods reduces the net value in the economy by the amount of the reduction in value of the goods.[citation needed]

The very concept of excess savings is meaningless without the presumption of an authority which can define the proper amount of savings. Money saved represents demand for money which is a commodity like windows or suits. The result of spending saved money is to lower the demand for money relative to suits or glass and therefore contributes to general price inflation (or loss of purchasing power). Such an authority would suggest that by controlling prices (forcing the exchange of savings for consumer goods), that the economy could be better off. This concept when enforced by governments is known as price controls and results in shortages when prices are artificially reduced below market value. A shortage of savings results in a reduction of capital investment as more resources are diverted from future needs to present needs. The shop owner was saving so that he could grow his business, but an outside authority has determined that his savings were 'excess' and that by breaking his window the economy will be better off. Without free exchange there would be no prices, and without prices there can be no economic calculation, and without proper economic calculation there is no means to determine whether or not a particular action will be 'profitable'. Therefore any authority that suggests that there might be an 'excess of savings' presumes the ability to make economic calculations without prices established by free exchange. This was shown to be impossible in Economic Calculation In The Socialist Commonwealth by Ludwig von Mises.

If there was more profit to be made by destroying buildings, windows or leveling an entire community due to a natural disaster than pursuing other courses of action then participants in the market would pro-actively and voluntarily destroy property. It is quite clear that far more profit can be earned by recycling, selling, or repurposing an old window pane than could be achieved via random destruction by vandal or nature. Therefore, arguments that propose that destruction 'might' be good for the economy have to presume that actors in the economy were missing an opportunity to profit in excess of the value of the goods destroyed. The probability of random destruction being good for the economy is equal to the probability of random destruction being bad for the economy as both are equal to the probability that free exchange has not achieved the best allocation of resources.

It must be noted however that non-owners (individually and collectively) also have a value as to the presence of such good, which can be positive or negative. Presupposing rational behavior and a free market, one would expect a community and the good owner to agree to some transaction to improve the overall welfare of both parties. However, problems might arise depending on the nature of the good in the sense that a free market economy might not be able to produce or adjust the level of a good to the Pareto optimal quantity of a good. One prominent example are public goodswhich are prone to the free rider problem and hence are subject to their over or under production.

Lastly, regarding the

[edit]See also

- Cobra effect
- Creative destruction
- Disaster capitalism
- Jevons paradox
- Spending multiplier
- Tax choice
- Uneconomic growth

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[edit]External links

- "Ce qu'on voit et ce qu'on ne voit pas" (original essay)
- "That Which is Seen and That Which is Not Seen" (English translation)

Definist fallacy

From Wikipedia, the free encyclopedia

The **definist fallacy** can refer to three logical fallacies related to how terms are defined in an argument. The first, coined by William Frankena in 1939, involves the definition of one property in terms of another. The second fallacy refers to the insisted use of a persuasive definition[1] in an argument. Finally, it can also refer to the Socratic fallacy in which terms are required to be defined before use.[2] This article focuses on the first of these fallacies.

The philosopher William Frankena first used the term *definist fallacy* in a paper published in the British analytic philosophy journal *Mind* in 1939.[3] In this article he generalized and critiqued G. E. Moore's naturalistic fallacy, which argued that *good* cannot be defined by natural properties, as a broader confusion caused by attempting to define a term using non-synonymous properties.[4]Frankena argued that the *naturalistic fallacy* is a complete misnomer because it is neither limited to naturalistic properties nor necessarily a fallacy. On the first word (*naturalistic*), he noted that Moore rejected defining *good* in non-natural as well as natural terms.[5]

On the second word (*fallacy*), Frankena rejected the idea that it represented an error in reasoning – a fallacy as it is usually recognized – rather than an error in semantics.[6] In Moore's Open Question Argument, because questions such as "Is that which is pleasurable good?" have no definitive answer, then pleasurable is not synonymous with good. Frankena rejected this argument as the fact that there is always an open question merely reflects the fact that it makes sense to ask whether two things that may be identical in fact are.[7] Thus, even if good *is* identical to pleasurable, it makes sense to ask whether it is; the answer may be "yes", but the question was legitimate. This seems to contradict Moore's view which accepts that sometimes alternative answers could be dismissed without argument, however Frankena objects that this would be committing the fallacy of begging the question.[6]

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Slippery slope

From Wikipedia, the free encyclopedia

This article is about the logical argument. For the novel, see The Slippery Slope.

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This article **is written like a personal reflection or essay rather than an encyclopedic description of the subject**. *(April 2012)*
This article **may contain original research**. *(April 2012)*

In logic and critical thinking, a **slippery slope** (also known as **thin end of the wedge** - or sometimes "edge" in US English - or the **camel's nose**) is an informal fallacy. A slippery slope argument states that a relatively small first step leads to a chain of related events culminating in some significant effect, much like an object given a small push over the edge of a slope sliding all the way to the bottom.[1] The strength of such an argument depends on the warrant, i.e. whether or not one can demonstrate a process which leads to the significant effect. The fallacious sense of "slippery slope" is often used synonymously with continuum fallacy, in that it ignores the possibility of middle ground and assumes a discrete transition from category A to category B. Modern usage avoids the fallacy by acknowledging the possibility of this middle ground.

Contents

[hide]

1 Description

- 1.1 Consequentialism and Unintended Consequences
- 1.2 Examples

2 Fallacy

3 Supporting analogies

- 3.1 Momentum or frictional
- 3.2 Induction

4 See also

5 References

6 Further reading

7 External links

[edit]Description

The argument takes on one of various semantical forms:

- In the classical form, the arguer suggests that making a move in a particular direction starts something on a path down a "slippery slope". Having started down the metaphorical slope, it will continue to slide in the same direction (the arguer usually sees the direction as a negative direction, hence the "sliding downwards" metaphor).
- Modern usage includes a logically valid form, in which a minor action causes a significant impact through a long chain of logical relationships. Note that establishing this chain of logical implication (or quantifying the relevant probabilities) makes this form logically valid. The slippery slope argument remains a fallacy if such a chain is not established.[*dubious* – *discuss*]

[edit]Consequentialism and Unintended Consequences

The core of the slippery slope argument is that a specific rule or course of action is likely to result in unintended consequences and that these "unintended consequences" are undesirable (and, typically, worse than either inaction or another course of remediation). This criticism is a consequentialist criticism - interested in consequences or outcomes or results of a course of action - and does not impugn the character or intentions of the one(s) offering the "slippery slope" argument(s), the basis or bases or concerns underlying the offering of the arguments against a rule or course of action, nor the legitimacy of arguing against any specific rule or course of action.

[edit]Examples

Eugene Volokh's Mechanisms of the Slippery Slope (PDF version) analyzes various types of such slippage. Volokh uses the example "gun registration may lead to gun confiscation" to describe six types of slippage:

1. Cost-lowering: Once all gun owners have registered their firearms, the government will know exactly from whom to confiscate firearms. Gun-control opponents argue against limits on the sale of "assault weapons" because the confiscation of sportsmen's shotguns will soon follow. Meanwhile, government officials defend their inflexible enforcement of a regulation, even in circumstances that some see as unfair, because allowing an exception would open the floodgates.
2. Legal rule combination: Previously the government might need to search every house to confiscate guns, and such a search would violate the Fourth Amendment to the United States Constitution. Registration would eliminate that problem.
3. Attitude altering: People may begin to think of gun ownership as a privilege rather than a right, and thus regard gun confiscation less seriously.
4. Small change tolerance, colloquially referred to as the "boiling frog": People may ignore gun registration because it constitutes just a small change, but when combined with other small changes, it could lead to the equivalent of confiscation.
5. Political power: The hassle of registration may reduce the number of gun owners, and thus the political power of the gun-ownership bloc.
6. Political momentum: Once the government has passed this gun law it becomes easier to pass other gun laws, including laws like confiscation.

Slippery slope can also be used as a retort to the establishment of arbitrary boundaries or limitations. For example, someone who is unfamiliar with the possible negative consequences of price ceilings might argue that rent prices must be kept to $1,000 or less a month to be affordable to tenants in an area of a city. A retort invoking the slippery slope could go in two different directions:

- Once such price ceilings become accepted, they could be slowly lowered, eventually driving out the landlords and worsening the problem.
- If a $1,000 monthly rent is affordable, why isn't $1,025 or $1,050? By lumping the tenants into one abstract entity, the argument renders itself vulnerable to a slippery slope argument. A more careful argument in favor of price ceilings would statistically characterize the number of tenants who can afford housing at various levels based on income and choose a ceiling that achieves a specific goal, such as housing 80% of the working families in the area.

Sometimes a single action does indeed induce similar later action. For example, judiciary decisions may set legal precedents.

[edit]Fallacy

The heart of the slippery slope fallacy lies in abusing the intuitively appreciable transitivity of implication, claiming that A leads to B, B leads to C, C leads to D and so on, until one finally claims that A leads to Z. While this is formally valid when the premises are taken as a given, each of those contingencies needs to be factually established before the relevant conclusion can be drawn. Slippery slope fallacies occur when this is not done—an argument that supports the relevant premises is not fallacious and thus isn't a slippery slope fallacy.

Often proponents of a "slippery slope" contention propose a long series of intermediate events as the mechanism of connection leading from A to B. The "camel's nose" provides one example of this: once a camel has managed to place its nose within a tent, the rest of the camel will inevitably follow. In this sense the slippery slope resembles the genetic fallacy, but in reverse.

As an example of how an appealing slippery slope argument can be unsound, suppose that whenever a tree falls down, it has a 95% chance of knocking over another tree. We might conclude that soon, a great amount of trees would fall; however this is not the case. There is a 5% chance that no more trees will fall, a 4.75% chance that exactly one more tree will fall (and thus a 9.75% chance of 1 or fewer additional trees falling), and so on. There is a 92.3% chance that 50 or fewer additional trees will fall. The expected value of trees that will fall is 20. In the absence of some momentum factor that makes later trees more likely to fall than earlier ones, this "domino effect" approaches zero probability.

This form of argument often provides evaluative judgments on social change: once an exception is made to some rule, nothing will hold back further, more egregious exceptions to that rule.

Note that these arguments may indeed have validity, but they require some independent justification of the connection between their terms: otherwise the argument (as a logical tool) remains fallacious.

The "slippery slope" approach may also relate to the conjunction fallacy: with a long string of steps leading to an undesirable conclusion, the chance of *all* the steps actually occurring in sequence is less than the chance of any one of the individual steps occurring alone.

[edit]Supporting analogies

Several common analogies support slippery slope arguments. Among these are analogies to physical momentum, to frictional forces and to mathematical induction.

[edit]**Momentum or frictional**

In the momentum analogy, the occurrence of event A will initiate a process which will lead inevitably to occurrence of event B. The process may involve causal relationships between intermediate events, but in any case the slippery slope schema depends for its soundness on the validity of some analogue for the physical principle of momentum. This may take the form of a *domino theory*or *contagion* formulation. The domino theory principle may indeed explain why a chain of dominoes collapses, but an independent argument is necessary to explain why a similar principle would hold in other circumstances.

An analogy similar to the momentum analogy is based on friction. In physics, the static co-efficient of friction is always greater than the kinetic co-efficient, meaning that it takes more force to make an object start sliding than to keep it sliding. Arguments that use this analogy assume that people's habits or inhibitions act in the same way. If a particular rule A is considered inviolable, some force akin to static friction is regarded as maintaining the status quo, preventing movement in the direction of abrogating A. If, on the other hand, an exception is made to A, the countervailing resistive force is akin to the weaker kinetic frictional force. Validity of this analogy requires an argument showing that the initial changes actually make further change in the direction of abrogating A easier.

[edit]Induction

Another analogy resembles yet misinterprets mathematical induction. Consider the context of evaluating each one of a class of events A_1, A_2, A_3,..., A_n (for example, is the occurrence of the event harmful or not?). We assume that for each *k*, the event A_k is similar to A_{k+1}, so that A_k has the same evaluation as A_{k+1}.

Therefore every A_n has the same evaluation as A_1.

For example, the following arguments fit the slippery slope scheme with the inductive interpretation:

- *If we grant a building permit to build a religious structure in our community, then there will be no bound on the number of building permits we will have to grant for religious structures and the nature of this city will change*. This argument instantiates the slippery slope scheme as follows: A_k is the situation in which *k* building permits are issued. One first argues that the situation of*k* permits is not significantly different from the one with *k* + 1 permits. Moreover, issuing permits to build 1000 religious structures in a city of 300,000 will clearly change the nature of the community.

In most real-world applications such as the one above, the naïve inductive analogy is flawed because each building permit will not be evaluated the same way (for example, the more religious structures in a community, the less likely a permit will be granted for another).

[edit]See also

- Argument from setting a precedent
- Creeping normalcy
- First they came...
- Gateway drug theory
- Trivial objections
- Splitting (psychology)
- Foot-in-the-door technique

- Precedent
- Overton window
- Parade of horribles
- Sorites paradox

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[edit]External links

- Propaganda Critic: Unwarranted extrapolation
- Nizkor: Slippery slope
- Fallacy files: slippery slope
- Slippery slope in politics

Camel's nose

From Wikipedia, the free encyclopedia

The **camel's nose** is a metaphor for a situation where permitting some small, seemingly innocuous act will open the door for larger, clearly undesirable actions. A typical usage is this, from U.S. Senator Barry Goldwater in 1958:

This bill and the foregoing remarks of the majority remind me of an old Arabian proverb: "If the camel once gets his nose in the tent, his body will soon follow." If adopted, the legislation will mark the inception of aid, supervision, and ultimately control of education in this country by the federal authorities.[1]

According to Geoffrey Nunberg, the image entered the English language in the middle of the 19th century.[2] An early example is a fable printed in 1858 in which an Arab miller allows a camel to stick its nose into his bedroom, then other parts of its body, until the camel is entirely inside and refuses to leave.[3] Lydia Sigourney wrote another version, a widely reprinted poem for children, in which the camel enters a shop because the workman does not forbid it at any stage.[4]

The 1858 example above says, "The Arabs repeat a fable", and Sigourney says in a footnote, "To illustrate the danger of the first approach of evil habit, the Arabs have a proverb, 'Beware of the camel's nose.'" However, Nunberg could not find an Arab source for the saying and suspected it was a Victorian invention.[2]

An early citation with a tent is "The camel in the Arabian tale begged and received permission to insert his nose into the desert tent."[5] By 1878, the expression was familiar enough that part of the story could be left unstated. "It is the humble petition of the camel, who only asks that he may put his nose into the traveler's tent. It is so pitiful, so modest, that we must needs relent and grant it."[6]

In a 1915 book of fables by Horace Scudder, the story, titled *The Arab and His Camel*, ends with the moral: "It is a wise rule to resist *the beginnings of evil*."[7]

The phrase was used in *Reed v. King* (193 CA Rptr. 130 - 1983): "The paramount argument against an affirmative conclusion is it permits the camel's nose of unrestrained irrationality admission to the tent. If such an 'irrational' consideration is permitted as a basis of rescission the stability of all conveyances will be seriously undermined." The case in question involved a plaintiff suing because the defendant sold a house without telling them that the house's previous inhabitants had been brutally murdered 10 years earlier.

There are a number of other metaphors and expressions which refer to small changes leading to chains of events with undesirable or unexpected consequences, differing in nuances.

- Foot in the door - a persuasion technique
- Slippery slope - an argument, sometimes fallacious
- "The thin end of the wedge"
- Domino effect
- For Want of a Nail - the claim that large consequences may follow from inattention to small details
- Boiling frog
- "Give them an inch; they'll take a mile."[8] The original saying goes "Give them an inch, and they'll take an ell."
- In Chinese culture, the "inch-mile" saying corresponds to the expression 得陇望蜀 (*De Long Wang Shu*), which is a quotation from the *Book of Later Han* about a Chinese general who took over Long (now Gansu) only to pursue further southwards into Shu (now Sichuan).[9]

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